

# From defining the educational challenge to sustainable changes in teacher behaviour:

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# **From defining the educational challenge to sustainable changes in teacher behaviour:**

Professionalising teachers of English in  
the Netherlands in the field of teaching  
English pronunciation

Frans J.J. Hermans

The research reported in this thesis was carried out at the  
**Welten Institute – Research Centre for Learning, Teaching and Technology**  
at the Open University of the Netherlands,  
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at the Fontys University of Applied Sciences of the Netherlands.



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# **From defining the educational challenge to sustainable changes in teacher behaviour:**

## Professionalising teachers of English in the Netherlands in the field of teaching English pronunciation

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“The mediocre teacher tells.  
The good teacher explains.  
The superior teacher demonstrates.  
The great teacher inspires.”

*William Arthur Ward*

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# **Chapter 1**

## **General Introduction**

## 1.1 Introduction

Dutch (ECS, 2011) and international (OECD, 2009, 2010, 2011) educational policy-makers put teacher professional development (TPD) high on the political agenda. In the Netherlands, special teacher scholarships and official teacher registers are means to stimulate TPD. TPD is often claimed to be the key to upgrading the quality of education, as it is generally accepted that teachers are the main external influence on students' learning. (Darling-Hammond, 2000; Marzano, 2003, Hattie & Timperley, 2007; Hattie, 2009; Van Veen et al., 2010).

Hattie (2009) indicated that six sources influence a student's achievement: 50% is what the student is capable of bringing to the table himself. Other sources are home situations, schools, peer influences and principals, which altogether make up 20 %, leaving 30 % to teachers. Therefore, investing in teachers is the most important external key to influence a student's achievement.

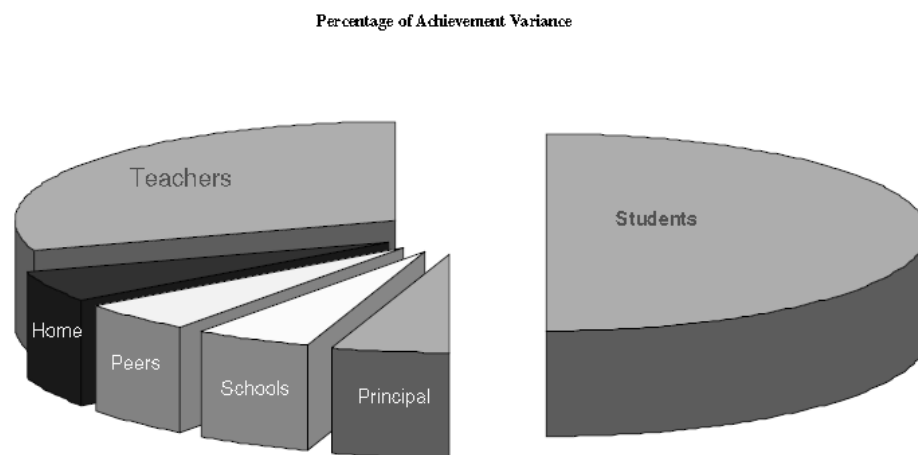


Figure 1: Adapted from Hattie Visible Learning: A synthesis of over 800 meta-analyses relating to achievement (2009).

Darling-Hammond (2000), using a 50-state survey of US school policies, claimed that research indicates that the effects of well-prepared teachers on student achievement is stronger than the influences of student background factors such as poverty, language background and minority. More research showed that teacher quality is significantly

and positively correlated with student achievement and that it is the most important within-school aspect explaining student achievement. Its effects are much larger than the effects of school organisation, leadership or financial conditions (Meiers & Ingvarson, 2005; Van Veen et al., 2010). Furthermore, other studies found positive relationships between in-service teacher training and student achievement and suggested “that an in-service training program ... raised children's achievement [...] (and) suggest that teacher training may provide a less costly means of increasing test scores than reducing class size or adding school hour” (Brussels, 3.8.2007 COM(2007) 392 final).

The Barcelona European Council in March 2002 adopted concrete objectives for improving Member States' education and training systems, including improving education and training for teachers and trainers. The Council in March 2006 noted that “[e]ducation and training are critical factors to develop the EU's long-term potential for competitiveness as well as for social cohesion.” It added that “[r]eforms must also be stepped up to ensure high quality education systems which are both efficient and equitable.” The quality of teaching is one key factor in determining whether the European Union can increase its competitiveness in the globalised world.

## 1.2 Enhancing Teacher Quality

If teachers are considered to be the most important external influence on student achievement, and enhancing teacher quality is the aim, knowledge on how to influence the teacher learning process in order to sustainably change teacher behaviour and classroom practice becomes crucial.

The idea that providing teachers with more theory and subject knowledge by means of various teacher training courses will automatically lead to better teaching practices and student achievements was already argued against by John Dewey in 1904. Every effort to only add skills to the teacher's toolbox without checking the effect on a student's progression might lead to a disappointing waste of energy.

Stigler and Hiebert (1999) called for attention to the importance of high standards, content focus, and in-depth learning opportunities for teachers. They indicated

several conditions delineating teacher professional development: *(a) ongoing (measured in years) collaboration of teachers for purposes of planning with (b) the explicit goal of improving students' achievement of clear learning goals, (c) anchored by attention to students' thinking, the curriculum, and pedagogy, with (d) access to alternative ideas and methods and opportunities to observe these in action and to reflect on the reasons for their effectiveness ... (1999, p. 15)*

Acknowledging that lists of characteristics such as Stigler and Hiebert's commonly appeared in the literature on effective professional development, Garet, Porter, Desimone, Birman, and Yoon (2001) argued however that there is little direct evidence on the extent to which these characteristics relate to positive outcomes for teachers and students.

There is no lack of research indicating that in order to successfully professionalise in-service teachers a more holistic approach, involving teachers in the complete process of defining the educational challenge up to designing and testing new teaching approaches, is necessary. Research provides some preliminary guidance about the characteristics of high-quality professional development (Loucks-Horsley, Hewson, Love, & Stiles, 1998).

Timperley (2008) stated that “[a]n important factor influencing whether professional learning activities have a positive impact on outcomes for students is the extent to which those outcomes form the rationale for, and ongoing focus of teacher engagement. Such a focus requires teachers to understand the links between particular teaching activities, the ways different groups of students respond, and what their students actually learn” (p.8). In order to influence teacher behaviour and motivate teachers to sustainably change their actual teaching practice, it is crucial for them to experience that the acquisition of new skills leads to the desired effect on students. A teacher should be able to put new ideas and approaches into his day-to-day practice and adjust and adapt new ideas according to his students' needs and abilities.

Although time-consuming, it is important for a teacher to become part of a cycle of effective professional design (Laurillard, 2013; Goodyear, 2015). They should be able to evaluate and measure the outcome of newly adopted and practised skills and should have the support of leaders in a process of trial and error, in order to avoid teachers refraining from taking risks as their position might be at stake because of traditional curriculum standards and evaluations.

Investing in e.g. extra teaching hours for certain subjects and target groups might stimulate teachers to implement and try out new approaches without running the risk of having to neglect other traditional approaches focussing on the existing and compulsory curriculum aspects.

Antoniou and Kyriakides (2013) advocated a Dynamic Integrated Approach (DIA), emphasising the need for a stronger link between research on teacher professional development and Educational Effectiveness Research (EER). They claimed that one should first take into account a group of teachers' specific needs, which need to be identified first. Subsequently, their argument goes, one should focus specifically on factors at the teacher level that are found to associate with student achievement. It is only then, that a more positive effect on student achievements and sustainable teacher learning than can be achieved with the holistic approach, in which teachers themselves decide on their needs.

Laurillard (2013) and Mor & Mogilevski (2013) see the teacher as the initiator of defining an educational challenge followed by the conceptualisation of the design, testing and implementation of new teaching approaches. This, however, means that certain conditions at a teacher's workplace should already be met before this first step can be taken. School leaders should have already facilitated teachers in a way that they are able to devote time to thinking about an educational challenge they would like to address, without being haunted by the school's curriculum and short-term student's achievements. Teachers should feel safe to start a cycle of trial and error without running the risk of being called to account too soon.

From personal communication with participating teachers in this research it appeared that for most of them who were teaching in secondary education in the Netherlands, the situation of the day-to-day practice of teaching (and the curriculum) leaves little if any room for in-depth research and design initiatives. However, teachers are able to sum up multiple educational challenges they are faced with in their day-to-day practice, which they would like to address when given time and opportunity. For example they mentioned issues like how to differentiate in class and how to implement summative testing, how to use ICT more effectively.

### 1.3 Aim of the research

Although several studies, involving teachers in a professional learning-design, have shown positive effects on teacher skills (Gaikhorst, Beishuizen, Zijlstra & Volman, 2015; Garet, Porter, Desimone, Birman & Yoon, 2001; Timperley, Wilson, Barrar, & Fung, 2007), few studies link successful TPD to better student achievements (Thomson, 2003; Cochran-Smith & Zeichner, 2009). In this study we aim to provide empirical evidence of both teacher professional development and better student achievement (as this link is very often absent from research into TPD). Before we focusing on in the TPD's effect on student achievement, we study the process of teacher professional development by involving teachers in the implementation process of a new teaching design. We focus on how teachers learn and change their classroom practice, on how they implement a new pedagogy, and on what motivates them to take part in experimenting with and implementing a new teaching tool. Our main research question (addressed in Chapter 4) is:

*Can we provide evidence of teacher professional development by involving teachers in practice-based research in which they implement and test a new teaching design?*

There is hardly any research covering the full spectrum of defining the educational challenge and implementing a new teaching design, to providing evidence of effective and sustainable TPD (Rogers, 2003; Alvalos, 2011). Next to a change in a teacher's attitude, beliefs, knowledge, teaching skills and classroom practice—for a TPD programme to be successful—it should result in a *sustainable* positive effect on teacher practice and student achievement (Roesken-Winter, Schüler, Stahnke, & Blömeke, 2015; Zehetmeier, 2015). It is important, therefore, to find out if aspects of TPD interventions become embedded in a teacher's day-to-day classroom practice or in a school's organisation. This leads to our follow-up research questions (addressed in Chapter 5):

*What evidence can we provide of sustainable change in teacher behaviour and classroom practice that results from a TPD programme?*

As it is crucial for policymakers and stakeholders, responsible for TPD, to gain knowledge on how teachers learn, it is worthwhile to study the conditions that lead to (or hinder) effective and sustainable TPD. In this research we study various contexts

(Timperley, Wilson, Barrar & Fung, 2007) that provide teachers with learning-opportunities. Our follow-up research question is:

*What conditions provide teachers with the best opportunities to learn and sustainably change their classroom practice?*

### 1.4 English Pronunciation as a context TPD

We investigate the process of TPD from the defining of the educational challenge and the designing and testing of a new teaching approach, to the study into signs of changes in teacher behaviour and the sustainability of those changes in classroom practice. This investigation takes place in the context of teaching English pronunciation to secondary school pupils and students at schools for intermediate and higher vocational education (universities of applied sciences) in the Netherlands. Note that when we refer to “students,” we mean both pupils and students.

Livingston (2016) claimed that teacher educators often get “caught in the winds of change of school curricula, examination systems and educational policies” but should take more responsibility in initiating educational change. In this TPD programme the stakeholder was a teacher training college that was struggling with the pronunciation skills of its first-year student-teachers of English. This led to the realisation that the teacher training college itself did not offer a solid pedagogy concerning teaching English pronunciation to student-teachers of English who were trained to teach English as a Foreign Language (EFL) at secondary school level. Student-teachers of English who are not trained to teach English pronunciation are likely to become in-service teachers who do not have the required skills to teach English pronunciation and for that reason ignore teaching it altogether. If teachers do not teach English pronunciation, secondary school students do not receive adequate training which, in turn, results in poor English pronunciation skill, affecting the intelligibility and the credibility of the speaker (Lev-Ari & Keysar, 2010). This, subsequently, is likely to explain the poor pronunciation skills of first-year student-teachers of English.



In order to break this cycle the educational challenge became to design a teaching approach which would improve secondary school students' English pronunciation skills. The first step for this was to determine the students' and teachers' needs (Antoniou & Kyriakides, 2013) which led to the following research question (addressed in Chapter 2):

*Which pronunciation mistakes are still prominently present in students' English pronunciation after two years of secondary education and after finishing secondary education in the Netherlands?*

The second step was to design and test a new teaching approach (for which we chose to design a computer assisted pronunciation teaching tool or CAPTT), that would improve the pronunciation mistakes that were most prominently present in students' English pronunciation after two years of secondary education and after finishing secondary education (so basically in the English pronunciation of the average Dutch speaker of English) in the Netherlands. This led to the following research question (addressed in Chapter 3):

*Is there a change in the number of pronunciation mistakes Dutch learners of English make in the error type categories selected, before and after working with the CAPTT?*

## 1.5 Structure of the dissertation

This dissertation presents the outcome of a four years' study concerning teacher professional development in the context of teaching English in EFL lessons in the Netherlands. The findings of the investigations are reported in four published research papers in the order of the actual research process (and not in the chronological order of publication) starting with initial research concerning the context of the TPD programme (*Teaching the Dutch how to pronounce English*, Hermans & Sloep, 2015), followed by research into the development and test results of a computer assisted teaching tool (*Teaching English pronunciation beyond intelligibility*, Hermans & Sloep, 2018) followed by research into teacher behaviour (*Teacher professional development in the contexts of teaching English pronunciation*, Hermans, Sloep & Kreijns 2017) and finally research into the sustainability of the TPD programme (*Teachers' motivation to sustainably change teaching behaviour*, Hermans, Sloep & Kreijns, submitted).

Chapter 2 presents the educational challenge which was the basis of the TPD programme and the design of a computer assisted teaching tool, focusing on teaching English pronunciation in EFL lessons in the Netherlands. It also provides the context for further research into teacher behaviour and teacher professional development. Although a lot is invested in teaching English, there seemed to be a lack of interest in teaching English pronunciation, leaving students with certain pronunciation difficulties which are disregarded in secondary education. In order to find out whether these pronunciation mistakes occur in the English pronunciation of the Dutch speaker of English in general, third year bachelor students, studying at various universities of applied sciences (in Dutch: 'hogescholen') were asked to record themselves while speaking English. Next to that, third year secondary school students were asked to record themselves. These recordings were all analysed and six error type categories were considered to be most problematic for the majority of Dutch speakers of English. These error type categories served as a starting point for the development of the teacher professional development programme aiming to professionalise EFL-teachers in the Netherlands in the field of teaching English pronunciation.

Chapter 3 focuses on the development and implementation of the computer assisted pronunciation teaching tool (CAPTT) and presents empirical data on student achievement after working with the CAPTT. As teachers in the Netherlands do not really have a solid pedagogy for teaching English pronunciation and pronunciation teaching is not really embedded in their curriculum, it was our aim to professionalise teachers in the field of teaching English pronunciation.

Chapter 4 focuses on teacher behaviour and professional development. As teachers were involved in two test phase periods in which they implemented working with the CAPTT in their classroom situation we studied the effect of implementing a new pedagogy on teacher behaviour and teachers attitude towards English pronunciation teaching. Motivating teachers to use our CAPTT in their EFL lessons was not the ultimate aim, but bringing about a change in attitude towards pronunciation teaching and a better teacher self-efficacy was. In Chapter 4 we discuss the signs of teacher change in order to find out how teachers learn and what motivates them to change their beliefs and classroom practice. Knowing about teacher motivation and how teachers learn leads to better TPD-programmes, addressing specific teachers' needs to improve students' output.

Chapter 5 presents data on the sustainability of the TPD programme. What happens when the teacher professional development programme is rounded off, researchers are no longer in contact with the teacher and there is no need for teachers to follow research procedures or provide data? Even though a TPD-programme might initially seem successful in changing the teacher's attitude or teaching practice in class, and better student achievement is evident, the sustained effect of a TPD-programme will be a decisive factor of actual educational change and progress. In Chapter 5 we revisit the teachers at their schools, a year after rounding off the TPD programme, and question teachers and students on the topic of pronunciation teaching, in order to find out which elements of the TPD programme are still present in the teaching practice of the teachers who took part in the TPD-programme.

The Chapters 2, 3, 4 and 5 represent the verbatim text of four interlinked research papers. As we do not want to weaken the structure of the individual papers, with the risk of causing obscurities, the text of the publications is reproduced here integrally, with the inevitable overlap of some overlap.

## Chapter 2

### Teaching the Dutch how to pronounce English<sup>1</sup>

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1) Chapter 2 is the verbatim text of: Hermans, F & Sloep, P (2015). Teaching the Dutch how to pronounce English. *International Journal of Language Studies*, Volume 9, Number 4, October 2015, pp. 55-80

## **Abstract**

The Dutch overestimate their English speaking skills. Their pronunciation is not always convincing, and certain pronunciation mistakes are easily recognized as being typical for Dutch speakers of English. Although intelligibility cannot exist without adequate pronunciation, teaching English pronunciation at Dutch secondary schools is often absent from the EFL teaching curriculum. Focusing on the most prominent pronunciation difficulties, often caused by the mother tongue (L1), will benefit the non-native speaker's intelligibility and credibility. In order to provide teachers with a time-efficient approach to teach English pronunciation, preliminary research is needed to identify the most prominent error types in the English pronunciation of the average Dutch speaker of English (in this study represented by secondary school pupils and bachelor students in the Netherlands). Research shows that fifty percent of the subject group makes seven types of pronunciation mistakes in more than fifty percent of the cases that such mistakes could be made. The conclusion discusses a general approach for addressing the kind of pronunciation problems we identified.

## **1. Introduction**

In a globalizing world it is important for non-native speakers of English to be able to communicate in English successfully. Native and non-native teachers who teach English as a foreign language (EFL) are able to influence the learner's English pronunciation. Teaching pronunciation, however, is not as self-evident as teaching grammar or idiom. Although many course books offer a wide range of communicative exercises, sections dealing with pronunciation issues are very often missing. Apparently, it is left to the teacher to decide how much time and effort will be devoted to teaching pronunciation. Because of the time-consuming aspect of finding the right materials and didactical teaching approach, teaching pronunciation is often neglected. However, a speaker making grammatical mistakes but speaking with a good pronunciation is more intelligible than a speaker making no grammatical mistakes but with poor pronunciation skills (Jenkins, 2000). So why do we teach grammar but neglect to teach pronunciation in EFL lessons?

With a time-efficient approach dealing with the most prominent pronunciation error types, very often caused by phonological interference (the effect of the mother tongue, or L1, on the studied foreign language, or L2) teachers will be able to improve students' English pronunciation. This cannot be done by banning L1 from the EFL-classroom, but by using L1 pronunciation to compare with L2 in order to establish and teach the phonemic and articulatory differences between the two. This chapter inventories the most prominent pronunciation mistakes made by Dutch learners of English and discusses some ideas on how education may help to avoid such mistakes.

## **2. Background**

In the 1940s, 1950s and into the 60s there was no question about the importance of teaching pronunciation as part of EFL teaching. It was considered to be as important as teaching e.g. correct grammar. This changed in the late 1960s, through the 70s and into the 80s, when teaching pronunciation lost ground in EFL teaching and even disappeared from many curricula altogether. Changing models for EFL teaching left no room for traditional pronunciation teaching, as communicative skills and authentic learning activities dominated the new teaching approaches. Teaching pronunciation

using ‘meaningless’ drill exercises were no longer popular and many linguists believed that acquiring a near-native accent should neither be a teacher’s nor a student’s aspiration.

Joan Morley (1991, p.487) indicates how throughout the decade of the 1970s some linguists rekindled the interest in teaching pronunciation and that:

*...the modest number of pronunciation-focused papers of the 1970s was followed in the 1980s by a significant increase in both journal articles and teacher resource books, clearly a reflection of renewed interest in pronunciation teaching principles and practices.*

As traditional pronunciation teaching strived for “perfect pronunciation” or near-native pronunciation, the new focus was on intelligibility and the communicative value of pronunciation. For non-native speakers to sound native-like seemed an unrealistic goal for EFL teachers and students, even a tedious and time consuming one, very often with a unsatisfactory outcome for both teachers and students. Scovel (1969) and others believed it to be impossible for non-native speakers to acquire a near-native like accent. Leather (1983) even stated that non-native speakers with a near-native accent were even negatively looked upon by some native speakers and uses Christophersen’s (1973) description of one possible native speaker’s reaction to too-perfect pronunciation in an L2 speaker may be that of “a host who sees an uninvited guest making free with his possessions” (p. 199). Scovel’s and Christophersen’s observations seem to contradict each other as the latter claims that it is possible for non-native speakers to achieve a near-native accent which some native speakers might look negatively upon.

Native speakers, however, also seem to add social value to a convincing pronunciation. Morley (1987/1988) expresses concerns that some non-native speakers’ pronunciation might cause a social disadvantage. Beebe (1978) observed that “the very act of pronouncing, not just the words we transmit, are an essential part of what we communicate about ourselves as people” (p. 121). She stated that native speakers often describe non-native speakers’ pronunciation as sounding cute, comical, incompetent, not serious or childish. That indicates that a non-native speakers’ pronunciation influences the credibility of the speaker. Indeed, according to Shiri Lev-Ari and Boaz Keysar (2010), native speakers consider trivia statements less trustworthy when uttered by non-native speakers with an accent. The effect, they show, is not due to prejudices native speakers may have against foreigners.

## 2.1 EFL teaching in the Netherlands

The European Union (2006) researched the English pronunciation skills of non-native speakers of English in 2006 and found that the Dutch overestimate their English speaking and pronunciation skills. In other European countries 20 to 30 per cent of the participants stated that they could easily communicate successfully in English. For the Dutch 80 to 90 per cent claimed to be able to successfully communicate in English. The same research shows that 25 per cent of Dutch businesses disadvantage themselves because of poor pronunciation skills in business negotiations.

English in secondary education in the Netherlands is a compulsory exam subject at all levels. Although many students have already gained some skills in English e.g. by watching TV, listening to music and playing online computer games with people from all over the world, secondary education treats English as a new foreign language for all students to be studied. So the basis for good pronunciation skills is to be established here. Research shows that “those learners, who show positive feelings towards the speakers of the new language, tend to develop more accurate, native-like accent” (Kenworthy, 1987, p.8). Dutch students are already surrounded by the target language from a very young age onwards, and the students’ needs are very specific and do not so much ask for more attention to suprasegmental details. It is the phonological interference (L1) causing most of the pronunciation difficulties. The amount of exposure to the target language, the learners’ age and the attitude towards the target language and L1 all play an important role in pronunciation teaching.

Teacher training colleges in the Netherlands use Received Pronunciation (RP) or General American (GA) as a reference for pronunciation teaching. Although there is no prescribed standard accent for teachers to use and teach in EFL lessons, most Dutch teachers of English have acquired a British accent themselves, based on the International Phonetic Alphabet (IPA) for RP. Depending on background and interest, a Dutch EFL-teacher might or might not aim for a standard accent for his/her own pronunciation. The teacher might have more of a “World English” accent which is highly intelligible but with phonological interference or a mixture of e.g. American, British and L1 phonemes.

Non-native (and native) teachers of English might find it difficult to detect certain pronunciation mistakes in their students’ pronunciation. Although they are able to hear

that certain sounds are off, it is quite difficult to determine the exact nature of the mistake. Brief and practical theoretical background information about certain aspects based on the principals from the field of phonetics is necessary. Works like An introduction to Phonetics (Birjandi & Salmani-Nodoushan, 2005), *The book of pronunciation* (Marks & Bowen, 2012), Sound foundation (Underhill, 2005) and *English pronunciation for student teachers* (Gussenhoven & Broeders, 1997) all provide the theoretical background and even add proposals for a practical pedagogy.

Although phonetics is part of every curriculum at teacher training colleges in The Netherlands, in the first author's extensive experience as a teacher and a teacher trainer, it is noticeable that the previously gained knowledge might partly disappear in the actual practice of teaching English, especially when teaching pronunciation is not really being dealt with when teaching English in EFL-lessons. Sometimes, when non-native teachers of English leave the academic environment, they lose the need to use their best academic English themselves in a classroom situation. For non-native speakers of English it is important to keep on practicing and using the English language.

In the Netherlands there is little pressure for teachers to prove they are involved in a continuous professional development process. However, from experience we know that it is possible for many Dutch EFL-(student) teachers to achieve a near-native pronunciation, contradicting some linguists' belief that a near-native pronunciation for non-native speakers of English is unachievable. Received Pronunciation has been the standard accent used throughout the various levels of the Dutch educational system since the beginning of EFL-teaching. Nowadays it is often claimed that traditional RP should be regarded as the classic example of a prestige accent used by a minority of people spread over England, who belonged to the educated and "well to do" class. Collins & Mees (2003) describe a more neutral type of modern British English which lacks obvious local accent features and which is used by the educated middle and younger generation speakers in England, who have a pronunciation which cannot be pinned down to a specific area. They call it non-regional pronunciation (NRP). Jenkins (2000, p. 18) suggests treating Received Pronunciation or General American not as the accepted standard for teaching pronunciation, but as a reference for non-native learners of English. Having the same reference would also result in a better intelligibility amongst the various non-native speakers of English with a different L1 background. In this research we do not choose RP as the standard, but as a reference for teaching pronunciation.

## 2.2. Objectives and main research question

In this paper the authors study the pronunciation skills of Dutch speakers of English at secondary schools and higher education. In particular, we address the question of which mistakes in pronunciation are not or insufficiently being dealt with when teaching English as a Foreign Language in secondary education in the Netherlands. Also, we aim to establish the most frequently occurring error types in the English pronunciation of secondary school pupils (from now on referred to as students) and college students (who study anything but English), with RP used as a reference.

Plenty of works offer a wide range of error analyses (e.g. The Phonetics of English and Dutch, Collins & Mees 2003) but as pronunciation is not part of many EFL curricula at secondary schools in the Netherlands, time efficient strategies are of utmost importance in order to stimulate EFL teachers to adopt pronunciation teaching and make it part of their EFL teaching. That is why we attempt to reduce the wide range of possible pronunciation difficulties Dutch speakers of English might face to a confined set of mistakes made by the majority of speakers. Such a confined set would provide teachers with a starting point for teaching pronunciation that would allow them to focus on the most beneficial aspects for the students within the limited teaching time available. Ultimately, the authors aim to achieve a better English pronunciation for students once they leave secondary school. In this paper the main research question is:

*Which pronunciation mistakes are still prominently present in students' English pronunciation after two years of secondary education and after finishing secondary education in the Netherlands?*

## 3. Method

### 3.1. Determining typical mistakes Dutch speakers of English make

The phonemes used in the International Phonetic Alphabet (IPA) for RP and the generally accepted rules of phonemes in contact, used in the field of phonetics, as described in

English pronunciation for student teachers (Gussenhoven & Broeders, 1997) and Sound Foundations (Underhill, 2005) are used as a reference to determine whether a sound has to be counted as a mistake or not. A format (Appendix A) is used in which 20 error type categories are identified and clarified. These 20 mistakes are the most commonly made mistakes in the first Pronunciation & Fluency test by first year student teachers of English at the Fontys University of Applied Sciences (unpublished research). Most of these students have a B2 entry CEFR level (Common European Framework of Reference for Languages), which is their secondary school level after passing the final exams. The typical mistakes Dutch speakers of English make are also described in A Teacher's Guide to Interference (Swan & Smith, 2001). For the Pronunciation and Fluency test an evaluation format (Appendix B) is used which offers a classification of the mistakes Dutch speakers of English tend to make. From that classification the 20 most commonly made mistakes by first year students of English during their first pronunciation test at the Fontys University of Applied Sciences are used to set up an observation protocol (OP, Appendix C).

### 3.2. Subject group and data

The corpus of the student-based data for this research was collected from sound samples of 40 third-year secondary school students following a bilingual course (more EFL lessons and other subjects taught in English), 40 third year secondary school students following a regular course at the same secondary school, with regular EFL lessons and 52 students from various parts of the Netherlands, following a bachelor course at various universities of applied sciences throughout the Netherlands. Of the total of a 132 recordings 20 recordings were randomly chosen and fully analyzed according to the OP. From the bachelor students 6 were randomly chosen, from the bilingual course students 7 and from the regular group 7. Then 5 more randomly chosen samples were analyzed to see whether the outcome of now 25 recordings would not deviate too much from the data of the first 20 recordings. The 5 extra recordings included sound data from 1 bachelor student, 2 students from the bilingual course and 2 from the regular group.

Native English speakers and students who studied English at university level, were excluded from participation. Data provided by bilingual students with English as one

of their mother tongues, with a consistent native-like non-RP English accent and with another mother tongue than Dutch, was also excluded. So, the data comes from Dutch students with Dutch as their mother tongue who study or studied English as a foreign language in secondary education only.

Secondary school students' parents were informed by means of a letter that recordings to collect data for a research were going to take place and that for their child participation was voluntary. None of the students had to be excluded because parents denied access to their child's data.

The research studies the typical error types Dutch speakers of English make which are not specifically addressed in secondary education in the Netherlands. For this reason students of the highest level within the Dutch secondary educational system (those being prepared for university) were chosen to participate. Together with the bilingual group, with enforced English, they are trained to achieve the highest level of English in the Dutch secondary educational system (CEF B2). It is likely that the mistakes these students make, will also be present in the pronunciation of students studying at lower levels. This was not checked, however. The bachelor students were added to find out which mistakes are still present after passing the final exams at secondary school. To make sure that the mistakes are not based on regional phonological interference, the bachelor student participants were chosen from various regions in the Netherlands.

The OP was specifically designed for this research. It produces quantitative and qualitative data. For the quantitative analysis the frequency of the various error types per participant were logged, resulting in an individual profile per student. The number of individual occurrences for each error type was totalled for all 25 students in order to find out which error types occur most frequently in the subject group as a whole.

The qualitative data records the pronunciation level of the student. It is related to the frequency of occurrence of each error type.

The data was gathered from two reading tasks: (i) an assignment asking students to read 13 isolated sentences which were specifically designed for this purpose to make sure the error type categories were covered (Appendix D), (ii) an assignment asking students to read a story in English (Appendix D) which is often used in the field of



phonetics to practice pronunciation, as it contains many of the difficult RP phonemes for EFL- learners. The 20 error types selected as indicators are represented in Table 1.

Table 1  
*20 Error Types as Indicators of failure to Produce RP Pronunciation*

Vowels	Vowels: diphthongs	Consonants	Contact
vowels too short	aʊ, aʊ ɔʊ	r –colouring	no linking –r
e, ɛ /æ	əʊ, o: / ɔ:	final lenis = fortis	no gradation
æ, e	eɪ, e: / aɪ	ð, d	no liaison
ʌ, ə/ ɒ / ɣ	aɪ, aɪ / ɔj	θ, t,s,f	
ɒ, ɔ: / ɑ: / ʌ	RP /ɑ:/ = GA /æ/	v, f	
ʊ / u:, oe		no aspiration /p t k/	

### 3.3 Data collection

Secondary school students were told weeks in advance that their pronunciation performance were to be recorded for the purpose of research. Teachers of English were asked to show (not practice) the two reading tasks in class so that the students knew what the recordings were going to be about. On 13 September 2013 students were asked to spread over two big rooms where 22 assistants (third year student-teachers of the Fontys University of Applied Sciences) were waiting for them with the tasks and a recording device (voice recorders on iPhones, iPads, laptops and smartphones). The students were asked to sit with one of the assistants. The tasks were explained once more and the students were allowed to read through the tasks and ask questions before the recording session started.

The assistants were asked not to interrupt the speaker during the recording session. Once the recording session was over the assistants were asked to send the sound file to the principal investigator's email address in order to make sure that all the data was immediately and safely stored.

The OP was used to register the occurrence of the preselected error type categories. In the two reading tasks parts of the text where the occurrence of a particular error type might be expected were underlined and numbered so that the PI and two assistant testers analysed the same number of error type items. The recordings had to be analysed for

all of the 20 error type categories for each individual student. It was possible to stop the recordings as many times as necessary in order to establish whether a pronunciation mistake was made. The assistant testers were instructed to write down the number of mispronounced words for each error type and they were asked to accept only correct RP pronunciation. A format with error type descriptions were given beforehand. For each category a new sheet with words and phrases underlined was designed to make it possible to write down the number of the pronunciation mistakes for a preselected set of words or phrases for each error type. Per error type, therefore, a fixed but differing number of mistakes could be made by the students (see Appendix C for further details).

After a test run of 4 students who were all individually analysed by the principal investigator and his two assistant testers, the three investigators compared notes. In an effort to make sure no systematic differences would exist between their individual analysis practices the results were discussed and, where needed, the distinction between RP and non-RP pronunciation was further detailed. Summed over all 20 error types, 779 mistakes could be made per student, totalling 19475 possible mistakes for the subject group of 25 as a whole.

Appendix C shows that the absolute number of possible mistakes per error type varied from 10 for T is t and 100 for final lenis is fortis. It also shows that the number of times a student could make a particular mistake varies per category. Therefore, in order to determine the most frequently occurring error types, the observed frequency of occurrence of an error type was weighed by the frequency of the possible number of occurrences. The resulting percentage per error type category was used to establish the most frequently occurring error types in the pronunciation of the subject group.

Table 2  
*Error types made by 50+% of Students in 50+% of Possible Cases in Tests*

rang	error type	No of students making particular error	% of particular errors made
1	ð = d	22	85.0
2	no aspiration /p t k/	20	82.7
3	æ, e	20	69.8
4	θ = t,f,s	19	75.6
5	no linking –r	19	65.2
6	no gradation	16	63.3
7	əʊ = o: /	13	54.0

4. Results

Initially the data of a group of only 20 students was analysed. Then the analyses of five more students were added to measure if they affected the final outcome. There was a difference of only 1.7 % between the subject group’s averages of both measurements: the average for the first 20 was 43.5% and for the total 25 it was 45.2%. There was no change in the order of the final seven categories ending up as the categories with the most occurring mistakes in percentages. Only two categories were really influenced. Those error types hardly ever occurred with most students but when a student pronounced mistakes in these categories, they would automatically go wrong on every possible occasion and by that causing a huge effect on the total outcome. One student of the added 5 made two of those error type mistakes and changed the outcome of two categories which scored low with most students. Since this was an obvious anomaly, it was decided, therefore, that a sample of 25 sufficed as an estimate of the frequencies of occurrence of the most frequently occurring error types.

Figure 1 displays the difference between the analyses of first 20 students and the analyses with five students added. The percentages are weighed by dividing, per error type, the number of mistakes made by the total number of errors possible to be made.

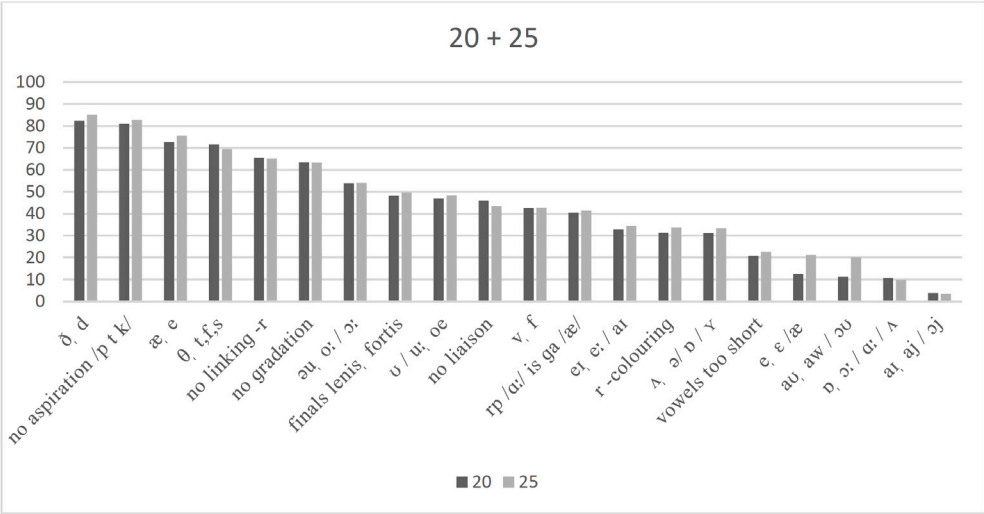


Figure 1. First 20 students vs. 5 students added

Figure 2 shows the percentages of mistakes the subject group made, giving an insight into the order of the error type categories from the error type category with the most scored mistakes to the error type with the fewest frequently made mistakes in percentages for the subject group.

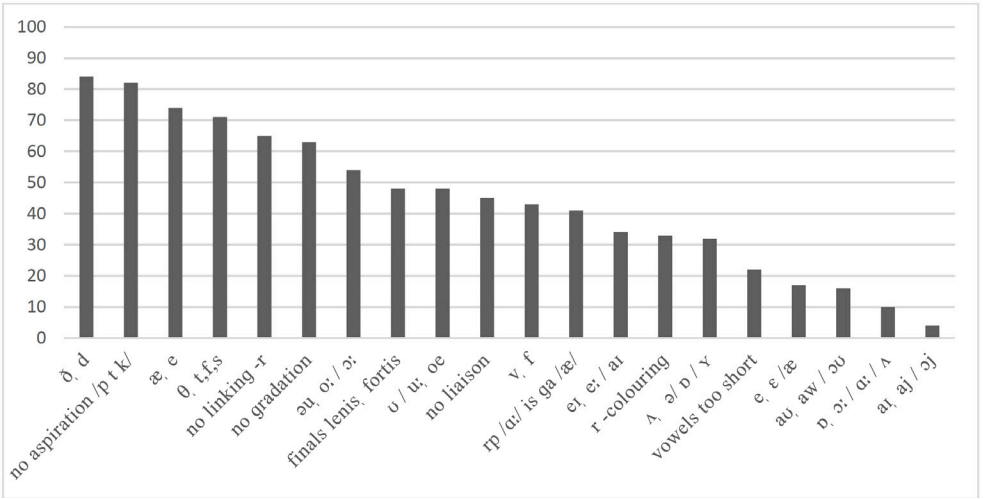


Figure 2. Percentages of the mistakes made by the subject group

In this research an error type category is considered to deserve more and specific attention in secondary education if 50 % of the subject group makes mistakes in more than 50 % of the possible mistakes to be made in this category. The results show that seven error categories meet this requirement (Figure 2). For further research and for the development of a teaching approach for pronunciation in EFL lessons in secondary education it is important to establish which error types are predominant.



## 5. Discussion

Considering the finding that pronunciation and intelligibility are intertwined and that a near-native English accent enhances the non-native speaker's credibility (Jenkins, 2000), the authors consider devoting time to teaching pronunciation at secondary school level is both essential and worthwhile. In a globalizing world we want our students to sound as intelligible and credible as possible and teaching pronunciation is one of the main tools to achieve this. Pennycook (2011, cited in Reid, 2012, p.32) argues:

*From its wide use in many domains across the world, or the massive efforts in both state and private educational sectors to provide access to the language, to its role in global media, international forums, business, finance, politics and diplomacy, it is evident not only that English is widely used across the globe but also that it is a part of those processes we call globalization.*

As teaching a foreign language involves more than only focusing on pronunciation, it is important to be time-efficient and deal with those issues in a classroom situation that would correct the most frequently occurring mistakes made by most students. Our research data shows that seven error types occur in more than 50% of the cases in which the error could be made, for more than 50 % of the subject group (Figure 2). Using a teaching approach which focuses on improving students' pronunciation skills with regards to the error types in Table 2 would mean improving the pronunciation of the majority of students in a classroom situation. In all the error type categories at least 84% of the students would benefit from such an approach. For most of the categories this percentage is even higher and in categories with rank number 1 and 2 even 100% would benefit.

However, when teaching secondary school students there is a limit to what one can expect students to comprehend in terms of theory and even physical pronunciation skills. By simply providing theory or practicing the error types mentioned in Table 2 students and teachers might waste valuable time on certain aspects which cannot be significantly improved in the time given for studying English at secondary school level. That is why the authors would advise not to take up error type number six, no gradation, in an approach that tries to improve secondary schools RP-pronunciation skills.

Underhill (2005) points out that neither an academic approach for training teachers nor

the repetition approach for training students seemed effective or enjoyable when teaching pronunciation and he claims that teachers and students need direct and conscious experience of experimenting with the muscles and breath energy in their vocal tract. Hismanoglu (2004) indicates that in recent years focusing on the physical and visual aspects of pronunciation, e.g. movement of the lips, tongue and jaw, has become more popular.

For the remaining six error type categories a physical approach would be advisable as you cannot improve your pronunciation by studying theory alone. The physical approach of teaching pronunciation requires teachers to transfer the existing theory on phonetics (RP) into a physical approach, explaining and showing place and manner of articulation, describing the movements of articulators, pointing out how phonemes behave in contact with other phonemes and how certain phonemes behave in certain positions.

We doubt whether it is useful to teach phonetics (and the IPA symbols) at secondary school level, but do consider it to be of great importance to devote time to actually teaching pronunciation (which does not equal teaching speaking skills or practicing communicative exercises) just like time is devoted to e.g. grammatical and idiomatic aspects of a language. Pronunciation can be taught as an isolated part in EFL lessons, but there is no point in isolating pronunciation from teaching grammar or idiom or ignore it while reading texts or practicing speaking. The need for an authentic learning approach is evident as teaching pronunciation only by means of pre-structured pronunciation assignments will cause a teacher to miss out on all the opportunities to practice pronunciation in day to day classroom discourse while teaching the various other skills of the target language. Every context is valuable and suitable for teaching pronunciation.

## 6. Conclusion

Our research only focused on typical mistakes students with Dutch as their mother tongue make while speaking English. Teachers should be aware of the fact that with a varied population of students with various mother tongues, the origin of certain pronunciation mistakes might differ because every L1 (mother tongue) influences the pronunciation of L2 (target language) in its own specific way. In *Teaching and Researching English Accents*

in *Native and Non-Native speakers* (Waniek-Klimczak & Shockey, 2013) various research papers show typical pronunciation difficulties for Vietnamese, Polish, and French-speaking learners of English. *A teacher's guide to interference and other problems* (Swan & Smith, 2001) focuses on major problems of pronunciation and other errors with chapters covering Korean, Malay/Indonesian, Polish and many more language backgrounds. It is worthwhile for a teacher to study typical mistakes made by certain L1 speakers to find out about the influence of that L1 on the pronunciation of, in this case, English. Indeed, although the details of approaches to remedy typical L1 language mistakes for a particular L2 will no doubt depend on the specific L1-L2 combination, we are convinced that the overall features of any such approach will be similar. Our future research will be devoted to outlining such an approach, in our case for the L1-L2 combination of Dutch and English.

Therefore, first of all further research on the effects of teaching pronunciation using a physical approach is needed. That is, it is particularly important to design an approach helping teachers to avoid having to deal with difficult theories on phonetics and pronunciation in a classroom situation. The focus should be more on the physical aspects of pronunciation. For students this means learning by doing. In his *First Principles of Instruction*, David Merrill has shown that having students apply themselves what they have learnt is a powerful learning strategy (Merrill, 2007). An attractive e-learning environment could allow students to work on their pronunciation outside of the classroom. As an added benefit, this set-up gives the teacher the opportunity to deal with pronunciation without using time-consuming pronunciation activities in class. It also helps to differentiate between students with various needs. Students can work on their pronunciation at their own pace and hand in their final pronunciation task when they are satisfied with their results.

Second, Hismanoglu (2004) states that reflective pronunciation teaching and learning has gained importance. For this recorded sound data of students' speaking performances is used in order to create individual pronunciation portfolios. So one could help students to avoid typical L1 mistakes for some L2 by stimulating them to record their speech and then learn from their own pronunciation by listening to recordings of their speech. Self-monitoring leads to self-correction. Sound-portfolios, furthermore, help students and teachers to gauge progress (and lapses, as the case may be).

Third, EFL teachers would benefit from a teaching design focusing on the principles of scaffolding, breaking up the learning into increasingly more difficult tasks while being engaged in whole tasks. Such an approach is described by Van Merriënboer and colleagues as the 4C/ID model (Van Merriënboer & Kester, 2005). For each part a specific structure or method should be provided. To scaffold pronunciation an approach should start with specific sound data focusing on phonemes in isolation, then on the use of these phonemes in smaller context (words, phrases or sentences) before using authentic contexts. Students could model phonemes by listening to and watching videos. The videos would provide not only sound data but also show the articulatory aspects of pronunciation. As already suggested, it is worthwhile for students to record their own pronunciation performances in a sound-portfolio.

Fourth, teachers do not only need specific theory on the phonetic aspects of pronunciation, but also a clear strategy to implement the theory in a practical approach. Teachers should be aware of which articulators to use when producing certain phonemes. They should be able to explain what happens in the mouth, where to put the tip, blade or front of the tongue, how and where to compress or release the air, when lip-rounding is important, when to voice a phoneme and all that without using terminology like "fortis and lenis", "plosives and fricatives" or "alveolar and bi-labial".

Another difficult aspect of teaching pronunciation is that sometimes it is hard to detect specific mistakes in fluent speech. Teachers need to develop a trained ear to be able to detect mistakes and isolate phonemes. By determining specific error type categories and focusing on these difficulties when students speak, it will be easier to isolate phonemes and correct mistakes.

As pronunciation has been neglected over the last decades, also in pre-service teacher training, an approach to in-service training of teachers and their continued professional development needs to be developed, if pronunciation is to become part of the teacher's standard skill set. However, one need not wait until these researches have been conducted and teaching designs have been developed. At a practical level, pronunciation could already be dealt with whenever specific mistakes occur. In particular, one should avoid waiting until students have studied some grammar and idiom and are able to communicate by means of using basic idiom and grammar. There is no point in accepting certain mistakes for a year or two and then try to correct them. It will be more difficult for a

student to get rid of a certain mistake in pronunciation than to study the right way of producing a phoneme from the start. So from day one teachers should adopt an approach that deals with specific difficulties (in the case under investigation six specific error types most Dutch learners of English struggle with), explaining the physical aspects of these phonemes in isolation and in contact with other phonemes. After that, they will only need to point out these mistakes whenever they occur, in whatever part of the EFL lesson. Instead of never correcting pronunciation mistakes for the sake of maintaining a safe environment, it is wiser to always correct pronunciation mistakes (so that students know it is always an issue). The only exception would be in situations for which an uninterrupted production of speech is necessary.

## Chapter 3

### Teaching English pronunciation beyond intelligibility:

### Implementing a computer assisted pronunciation teaching tool (CAPTT)<sup>2</sup>

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2) Chapter 4 is the verbatim text of: Hermans, F & Sloep, P (2018). Teaching English pronunciation beyond intelligibility. *International Journal of Language Studies*, Volume 12, Number 1, January 2018, pp. 107-124

## Abstract

Teaching English pronunciation is being neglected in English lessons in the Netherlands. Most teachers do not have a specific pedagogy for teaching English pronunciation or do not consider it to be important. Students with a desire for more native-like English pronunciation, be it to enhance their intelligibility, confidence or credibility, are faced with a lack of skilled professionals who are able to provide them with the necessary feedback for improvement. Research shows that a student-oriented computer-assisted pronunciation teaching tool can significantly improve students' pronunciation skills, even without initial teacher input.

## 1. Introduction

In this research we focus on the effectiveness of a pronunciation teaching approach on the English pronunciation of Dutch students in secondary, intermediate and higher education, using a Computer-Assisted Pronunciation Teaching Tool (CAPTT). The aim is not only to improve students' intelligibility but also to improve non-native speakers' English accent for those students who would like to achieve a more near-native pronunciation. We are well aware of the fact that this is not an approach to be used by teachers teaching students who are not able to use L2 intelligibly yet. However, we are confident that the pedagogy suggested and the basic principles of the designed computer assisted pronunciation tool, can be used for every L2 being taught, as long as the instructor is aware of the students' needs and the most common L1 phonological interference on the taught L2. Our research question is: *Is there a change in the number of pronunciation mistakes Dutch learners of English make in the six error type categories selected, before and after working with the CAPTT?*

## 2. Background

Most empirical research on the effectiveness of teaching pronunciation, be it by means of classroom instruction or computer-assisted pronunciation teaching, concerns the Intelligibility principle (Levis, 2005). According to this principle, one should help learners become more understandable. The 'Native' principle, in which teacher and student try to achieve a near-native L2 pronunciation for the student, is usually neglected as attempts are very often considered to be a waste of time and energy that will only lead to disappointment for both teacher and student (Flege, Munro & MacKay, 1995; Thomson & Derwing, 2015). This automatically leaves students who have already achieved intelligibility, but who desire a more near-native L2 pronunciation, without a chance to meet their goals. Although students who would like to achieve a near-native pronunciation are usually highly motivated, they still need instruction and feedback in order to improve their pronunciation skills. In other words: they need skilled instructors to provide them with the necessary theory and feedback on segmentals and suprasegmentals of the L2 they want to master to a high level.

Although intelligibility is the first aim for any teacher teaching, and any student studying, English as a foreign language (EFL) and various linguists claim that near-native pronunciation is only for the highly motivated individuals (Moyer, 2004) and those with special aptitude (Ioup, Boustagi, El Tigi & Morselle, 1994), credibility and confidence are important aspects of pronunciation too (Hendriks, van Meurs & Reimer, 2018). Students with a desire for a more native-like accent of English should not be ignored, whether they desire to feel more confident or want to be considered to be more credible in a setting in which English is the overall communication tool. To meet these students' needs, we require skilled instructors who can determine those needs (Thomson & Derwing, 2015) even for accent features that might seem less salient for those only interested in intelligibility.

As more and more of today's students will be operating in a globalised world, with English as the overall communication tool, not only for communication with native speakers, but also with non-native speakers of English, of course the intelligibility as well as the confidence and the credibility of the speaker become important. In Chapter two we already stated that non-native speakers of English who speak with a native-like accent are considered to be more credible to native and non-native speakers than non-native speakers speaking English with a mild or heavy accent. According to Shiri Lev-Ari and Boaz Keysar (2010), native speakers consider trivia statements less trustworthy when uttered by non-native speakers with an accent. Other studies also claim that a foreign accent may serve as a basis for negative social evaluation and discrimination (Lippe-Green, 1997; Munro, 2003).

## 2.1. Pronunciation teaching evolution

In the 1940s, 1950s and into the 1960s, there was no question about the importance of teaching pronunciation as part of EFL teaching. It was considered to be as important as, for instance, teaching correct grammar. This changed in the late 1960s, through the 1970s and into the 1980s when teaching pronunciation lost ground in EFL teaching and even disappeared from many curricula altogether. Changing models for EFL teaching left no room for traditional pronunciation teaching, as communicative skills and authentic learning activities dominated the new teaching approaches. Teaching pronunciation and

using drill exercises were no longer popular and many linguists believed that acquiring a near native accent should neither be a teacher's nor a student's aspiration.

Joan Morley (1991) indicates how throughout the decade of the 1970s some professional linguists rekindled the interest in teaching. As traditional pronunciation teaching strived for "perfect pronunciation" or near-native pronunciation, the new focus was on intelligibility and the communicative function of pronunciation. For non-native speakers to sound native-like seemed an unrealistic goal for EFL teachers and students, even a tedious and time consuming one, very often with an unsatisfactory outcome for both teachers and students. Scovel (1969) and others even believed it to be impossible for non-native speakers to acquire a near-native or native-like accent. Leather (1983) stated that non-native speakers with a near-native accent were even negatively looked upon by some native speakers and used Christophersen's (1973) description of one possible native speaker's reaction to too-perfect pronunciation in an L2 speaker may be that of "a host who sees an uninvited guest making free with his possessions" (p. 199).

Native speakers, however, also seem to add social value to a convincing pronunciation. Morley (1987/1988) expresses concerns that some non-native speakers' pronunciation might cause a social disadvantage. Beebe (1978) observed that "the very act of pronouncing, not just the words we transmit, are an essential part of what we communicate about ourselves as people" (p. 121). She stated that native speakers often describe non-native speakers' pronunciation as sounding cute, comical, incompetent, not serious or childish. That indicates that a non-native speakers' pronunciation affects the credibility of the speaker.

## 2.2. Pronunciation teaching in the Netherlands

In the Netherlands children are influenced by American and British music, TV shows and films from a very young age. Even cartoons for children from the age of four focus on English words and phrases (e.g., Dora The Explorer) and computer games foster the use of English as children play games online with gamers from all over the world, using English as their communication tool.

Although teaching English at primary school level is not obligatory yet, plenty of primary schools already invest in teaching English as a foreign language. At secondary school level EFL is an obligatory subject for all levels and forms. Depending on the level they study, students will receive four, five or six years of EFL teaching, with an average of three hours per week, and many intermediate, bachelor and master courses include EFL courses in their curricula. All this investment leads to intelligibility for the majority of Dutch speakers of English at a rather young age (i.e., after two or three years of secondary education and some even long before that).

For EFL teachers in the Netherlands this means that teaching pronunciation is not a priority and in most cases, not even part of the EFL curriculum at all. The average course book used for teaching English as a foreign language in the Netherlands offers a wide range of texts and exercises focussing on communicative skills based on the principles of Communicative Language Teaching (CLT), which took hold in the 1980's as a response to the Cognitive Approach (Chomsky, 1965; Neisser 1967). This approach considered language to be a rule-governed behaviour, with the focus on grammar and vocabulary. Next to the communicative exercises, most course materials offer some grammar explanation and plenty of texts to read on various topics, as reading and text comprehension are the most important aspects of the final examinations for all the levels of secondary education.

In the 1990s more and more secondary schools showed an interest in bilingual (English/Dutch) education. Based on the principles of Content and Language Integrated Learning (CLIL), schools started teaching other subjects than English in English too. There was a desire for better English skills among students (and parents) and by now there are more than 130 schools spread over the Netherlands, that in one way or another offer more EFL lessons and even treat the subject as a second language (ESL).

Although there seems to be a growing demand for better English language skills, there is still a lack of solid pronunciation teaching pedagogies (Hermans & Sloep, 2015). Besides the fact that many EFL-teachers never received any formal training to teach pronunciation, the lack of attention paid to pronunciation teaching in course books and curricula causes many teachers to ignore teaching pronunciation. Those who do consider it to be important, often correct students on the spot incidentally, but do not use a structured pedagogy to help more students in a classroom situation. Those who do try and offer a more structural approach in order to help more students, often rely too

heavily on pronunciation textbooks (Gussenhoven & Broeders, 1997; Marks & Bowen, 2012; Salmani Nodoushan & Birjandi, 2005; Underhill, 2005) and software without really addressing the specific student needs in their classroom situation (Derwing & Munro, 2005).

Although there are plenty of journals published focussing on pronunciation and phonetics (e.g., *Journal of Phonetics*, *Language and Speech*, etc.), the information rarely reaches the practitioner in the field. Some of the journals are also inaccessible to teachers as they lack the specialised knowledge of phonetics. Derwing and Rossiter (2002) found that students are often able to detect certain error types in their own pronunciation. However, they do not receive any instruction on how to correct their pronunciation. Thomson and Derwing (2015) indicate “that explicit instruction of phonological forms can have a significant impact, likely because it orients learners’ attention to phonetic information, which promotes learning in a way that naturalistic input does not.”

Teachers therefore should develop a trained ear for segmental (elements that can be identified as physical or audible units, like phonemes, syllables, words, phrases, etc.) and suprasegmental (harder to identify as separate units but rather belonging to a phoneme, syllable or word, like stress, intonation, nasality, or vowel harmony) aspects of their students’ speech production. As such, basic knowledge of phonetics and phonology is necessary for teachers to be able to detect these aspects and for their feedback to be effective. The teacher should be able to analyse the students’ needs based on empirical findings. Derwing and Munro (2005) state that plenty of studies suggest that pronunciation teaching can improve L2-learners oral production, but they lack proof of which aspects of pronunciation can be sufficiently influenced.

As with acquiring syntax, students need help noticing what they are doing with acquiring pronunciation (Flege & Wang, 1989) and teachers need to be aware of the students’ needs. In this study we focus on the aspects of pronunciation with which most Dutch speakers of English struggle, due to phonological interference (the effect of L1 on L2) and which do not so much influence the intelligibility, (though sometimes intelligibility is affected too) but have an effect on the near-nativeness of the English accent used. As most teachers are not trained in teaching pronunciation and have no structured teaching approach, it is important for teachers to have the opportunity to learn about pronunciation pedagogy in order to access and implement the materials needed for their students. As teaching



pronunciation is not part of most EFL curricula and there are no extra means reserved to spend on teaching materials to teach pronunciation, the pedagogy offered should be cost- and time-efficient.

2.3. The Computer-Assisted Pronunciation Teaching Tool (CAPTT)

Positive computer attitudes are needed for successfully implementing any computer-assisted pedagogy in the classroom (Van Braak, Tondeur &Valcke, 2004). Pope-Davis and Vispoel (1993) already suggested that attitudes towards technology take shape with regard to the perceived usefulness and ease of use, which are major enabling/disabling factors affecting adoption of technology by teachers (Albirini, 2006; Hermans, Tondeur, Van Braak & Valcke 2008). Kreijns, Vermeulen, Kirschner, Buuren and Acker (2013) use Ajzen and Fishbein’s (2000) Integrative Model of Behaviour Prediction to focus on the many distal and proximal variables to explain why teachers may be reluctant to use specific ICT tools. Many attitudinal studies claim that for the successful implementation of a computer assisted teaching tool, a users’ positive attitudes toward it is crucial, so designers ought to take into account possible teachers’ and students’ concerns in using a CAPTT in the classroom (Watson, 1998).

There are plenty of CAPTTs available, but many of them focus more on technological novelties than on thinking of students’ needs or a solid pedagogy for teaching pronunciation (Derwing & Munro, 2005). Building an overly rich learning environment, because technology allows the designers to do almost everything, might overwhelm the user, as they might only be able to cope with, or indeed, be interested in a small part of the presented learning materials. The designers’ first focus should be on the students’ needs and on achievable goals for which a solid pedagogy is needed. For a designer to think about the already available ICT environment at schools, the available devices (tablets, phones) for students and the teachers’ and students’ needs before designing the CAPTT, reduces the risk of the design being financially too demanding. Schools might not be willing to invest in recording equipment and elaborate software. Not only cost- but also time-efficiency is important. It is not realistic to expect teachers to spend hours and hours of their teaching time on teaching pronunciation, as there is still a national curriculum to be met.

The CAPTT should also allow self-monitoring. The learner should be able to compare his/her own performance (recordings) with native like pronunciation in order to focus on the deviations, which are mostly caused by phonological interference (Flege, 1995). So in order to avoid possibly complicating factors of using a CAPTT for either students, teachers, school leaders or researchers, a set of initial requirements was drawn up.

Table 1  
Requirements for the Computer Assisted Pronunciation Teaching Tool

Requirements CAPTT	students	teachers	school leaders	Researcher
time efficient	✓	✓	-	-
easy to use	✓	✓	-	-
cost efficient	-	-	✓	-
set realistic goals	✓	✓	-	-
provide background information	✓	✓	-	-
facilitate feedback and peer consultation	✓	✓	-	-
provide evidence of improving student results	✓	✓	✓	✓
allow for assessment of design	-	✓	-	✓

In our study we will test a CAPTT designed on the basis of the requirements identified in Table 1. In order to make sure students would not have to invest time and effort in finding out how to use the CAPTT, an easily accessible website was built which was free of codes and passwords.

The lack of interest in teaching pronunciation in the past decades resulted in limited knowledge about successful instruction on pronunciation in EFL classrooms. Teachers are sometimes struggling with finding the right pedagogy for teaching pronunciation and do not always have access to research findings. For many designs for teaching pronunciation there is no reference to empirical evidence of better student achievements (Derwing & Rossiter, 2002). In our study we aim to provide empirical evidence on the effectiveness of a newly designed pedagogy for teaching English pronunciation to Dutch learners of English on students achievement.

2.4 Meeting students’ needs

Previously, sound data provided by secondary school pupils and bachelor students were analysed in order to determine the error types most frequently occurring in the English pronunciation of most of the Dutch pupils and students (Hermans & Sloep, 2015). Seven error types were present in the pronunciation of more than 50% of the target group in more than 50% of the cases in which a mistake in those error type categories could be made. Table 2 shows the seven error type categories.

**Table 2**  
**Types of Errors Made by More Than Half of the Students in More Than 50% of Cases Where Such Mistakes could be Made in the Tests Set to the Students**

Rank	Error Type Category	Frequency*	Percentage**
1	Voiced /ð/ is /d/	22	85.0
2	No aspiration /p, t, k/	20	82.7
3	Bad is bed /æ/ is /e/	20	69.8
4	Voiceless th /θ/ is t, f, s	19	75.6
5	no linking -r	19	65.2
6	no gradation	16	63.3
7	/əʊ/ is Dutch /o:/	13	54.0

\* Number of students making a particular error  
\*\* Percentage of errors of a particular kind made by the subject group

The error type category ‘no gradation’ was considered to be too difficult to be dealt with in secondary education and for students not studying English at university level. It takes a long period of complete immersion into an L2 environment in order to grasp the idea of weak and strong pronunciation of minor category words. It was decided that the already limited available time should be spent on the other six error type categories.

The error type categories were not only identified because of their negative effect on intelligibility (though pronouncing /s/ instead of /θ/in a sentence like ‘People are losing faith in politics’ might lead to confusion), but also because of their effect on the phonemic deviation from, in our case, the Received Pronunciation accent of English, as that is the most dominant accent used and taught in Dutch EFL teaching in secondary, intermediate and higher education in the Netherlands. With a CAPTT and a pedagogy focusing on these error type categories we aim to improve the pronunciation of students

with a desire for more than only an intelligible pronunciation (i.e., those who desire a near-native accent of English).

We believe it is possible to improve Dutch students’ English pronunciation, beyond intelligibility, by using a time- and cost-efficient, yet student-orientated teaching approach. The approach will make use of a specifically designed computer assisted pronunciation teaching tool (i.e., the CAPTT we discussed). We aim to investigate whether the approach significantly improves the English pronunciation of Dutch students in secondary, intermediate and higher education with respect to six error type categories which were previously established (Hermans & Sloep, 2015) to be predominant in the pronunciation of Dutch speakers of English. The six error type categories were not solely selected because of their effect on the intelligibility of the speaker, but also because of their effect on the credibility and the confidence of the non-native user of English.

3. Method

3.1.Design

The intervention took place in the first half of the academic year 2014-2015. In order to measure the effect of the teaching approach (i.e., training with the CAPTT in a classroom situation, which is the independent variable) on the occurrence of the six error type categories (i.e., the dependent variables) a repeated measures design was used, with a within subjects factor (i.e., training) with two levels (i.e., pre-test and post-test); between subject factors were ignored as subjects only function as replications (Hancock & Mueller, 2010). Such factors could have been specified since subjects were sampled at different schools and different types of schools. However, all subjects were considered to constitute a single group. First, sample sizes of each of the subgroups were likely too small to detect any differences. Besides, and more importantly, previous research (Hermans & Sloep, 2015) had taught us that all Dutch speakers of English made the same mistakes, regardless of gender, age, previous studies or level of education (with the exception of those who studied English at university). So the added value of investigating differences between schools and school types is likely to be small.



Six dependent variables were measured, corresponding to the different types of pronunciation errors discussed above. By randomly choosing the subjects for our present study from the group investigated to determine the six predominant error type categories (Hermans & Sloep, 2015), by reassuring that no previous teaching approach for teaching pronunciation was used by the teachers involved and by developing an intervention tool that is independent of teacher input and school environment, we believe the obtained data to be internally and externally valid, ascribing most of the measured difference between the pre- and post-test to the causal effect of using the CAPTT.

### 3.2. Participants

The subjects were pupils from two secondary schools in the south of the Netherlands, bachelor students following the Minor English Language and Culture who came from various universities of applied sciences which are spread all over the Netherlands and students from a school for intermediate vocational education (IVE), situated in the capital of the province of Limburg in the Netherlands. Students who did not have the Dutch language as their mother tongue but English (regardless of the accent), and students who studied English at bachelor level, were excluded from the analyses. Data provided by bilingual students and pupils with English as one of their mother tongues, with a consistent native-like non-RP English accent and with another mother tongue than Dutch, were also excluded. All the data used for the analyses come from Dutch students who are studying or studied English as a foreign language in secondary education only—with Dutch as their mother tongue and from students studying (not English) at schools for intermediate and higher vocational education (also with Dutch as their mother tongue). Teachers, pupils and students were all informed of the aims and objectives of the research.

### 3.3. Instrument

The CAPTT<sup>3</sup> was implemented in a dedicated website, using Liferay Portal EE (<http://www.liferay.com>). It provided students with seven chapters: one introduction on the topic of English pronunciation and six chapters covering six error type categories. The instructions were in Dutch to avoid any possible confusion. The only computer skills needed for students was knowledge about how to click and go to the next step. The recording tasks required a mobile phone or a tablet (voice recorder) and Wi-Fi in order to send the recordings to the teacher or the principal investigator (PI). Most phones and tablets have a standard voice recorder installed. Next to that there are plenty of voice recorders which can be downloaded for free. With a laptop, phone or tablet and an Internet connection the online module could be used.

Teachers were provided with a code and a password to be able to access the teacher area of the website. The teacher area provided them with background information on phonetics and pronunciation, test materials and keys to all of the assignments. Once the link to the website was opened, the teacher only had to instruct the students once by pointing out where to start. The instructions were all self-explanatory and the teacher's role, once the module was running, was more of a guide than a teacher. With the background information on phonetics and pronunciation and the recording tasks a teacher could give students feedback on an individual basis or in-group sessions. No further ICT skills were required.

The website made use of a straightforward format with text information and embedded videos. The contents only focused on the necessary information needed to improve students' English pronunciation in the six error type categories. Since the website only required limited and basic technical options, there was no need to charge schools for using the CAPTT. In the Netherlands students without a mobile phone are the exception. Using the mobile phone or a tablet as a recording device is a cost-effective way to gather sound data. A student without a phone or tablet, could always borrow a fellow student's phone to record a task in class. As most schools in the Netherlands (and all the schools involved in this research) have free Wi-Fi, students incurred no costs with gathering their sound data that were sent to the principle investigator via Email.

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3) Appendix E presents the contents of the student part of the CAPTT *Do you sound English?*

The website only offered the information necessary to address the six error types. The module provided seven lessons covering error types with which most English-speaking Dutch students struggled. Every error type category was introduced with textual information supported by video files, followed by recording tasks and practice materials. There were no side tracks and there was no unnecessary extra information or technical options added to the necessary information to be learnt about the selected difficulties in pronunciation. All of the chapters set achievable goals for students.

3.4. Procedure

Teachers were offered the basic background information on phonetics necessary to provide students with extra information and specific articulatory information concerning the six error type categories. Students were also provided with some background information on some of the phonetic symbols used, only to point out the difference between certain phonemes that are difficult to distinguish by Dutch speakers of English (e.g., the difference between voiceless th /θ/ and voiced th /ð/).

The recording tasks allowed teachers to give more individual student feedback. Students were able to analyse their own pronunciation by listening to their own recordings following a given evaluation format. Teachers were able to analyse the pre- and post-intervention test according to the same format the researchers were using. Teachers then could discuss the results of the analysis with their students. The pre- and post-intervention test provided data on student results before and after working with the CAPTT. Specific texts were designed in which all error type categories were represented in an equal frequency of occurrence. A strict protocol was handed out to three analysts who looked into the sound files individually and then compared the results.

Teachers received a strict procedure on how to present the CAPTT. The procedure prescribed the order of presenting the chapters concerning the six error type categories. Every teacher received individual instruction for the order of dealing with the various chapters in order to minimize the effect of error type categories being dealt with first or last, on the end result of the sampled group. The teachers were also instructed to only use the introduction of the CAPTT to introduce the topic (English pronunciation)

and to use no more than five minutes to introduce each chapter, using the background information on phonetics provided by the CAPTT in the teacher’s section. For the pre- and post-intervention test there was a strict procedure as well. The teacher’s role was that of a facilitating (making sure the CAPTT was available), providing guidance only if necessary.

All of the tasks in the CAPTT were self-explanatory so students could work at their own pace. With these strict procedures the aim was to minimize the effect of teachers (i.e., their personal interests, attitudes towards the teaching topic, backgrounds, skills, etc.) on the results of the post-intervention test. Minimizing the teacher’s input enhances the validity of the effect of the CAPTT on the post-intervention results.

3.5. Data

To test the effect of working with the intervention tool training using the CAPTT the corpus of the student-based data for this research was collected from sound samples of a pre- and post-intervention test of 89 secondary school students studying English at various levels and aged between 13 and 17. Two secondary schools, one from the middle and one from the south of the Limburg province in the Netherlands were involved. Next to that, sound data of 53 bachelor students from various parts of the Netherlands, following a bachelor course at various universities of applied sciences throughout the Netherlands and aged between 20 and 25, were gathered. Finally 20 recordings from students following a course at an IVE school, aged between 20 and 25, were added. Five secondary school EFL teachers, five EFL teachers teaching Bachelor students, and one teacher teaching fourth year students at a IVE school in Limburg took part in the first test phase of a CAPPT named *Do your students sound English?*

Table 3 Number of Available Recordings in the Test Phase

Level	Participants’ Age	No. of Recordings
secondary schools pupils	13-17	89
intermediate vocation students	19-23	20
bachelor students	19-25	53

Of a sample size of a 162 recordings a sample frame of 70 recordings was randomly chosen and fully analysed according to an Observation Protocol. Not all the recordings were used for analysis, as this would not have been manageable for the PI. However, all the teachers were provided with the procedures and the observation tool in order for them to be able to analyse the data of their own students, so no student would have to be excluded from an analysis (and feedback).

After comparing the error type analyses of 15 recordings by three analysts (i.e., PI and two co-investigators) an inter rater coefficient of 0.871 indicated a high correlation between the analyses of the three investigators. With the number of available recordings being higher than the actual sample frame used, it was possible for the PI and his two assistants to randomly choose the participants' recordings to make thorough analyses manageable within the available timeframe. From the bachelor students 30 sound files were randomly chosen, from secondary schools 30 as well, and from the IVE school 10.

The Observation Protocol was specifically designed for this research. It produces quantitative and qualitative data. For the quantitative analysis the frequencies of the various error type categories per participant were logged, resulting in an individual profile per student. The number of individual occurrences for each error type category was totalled for all 70 students in a pre- and post-module situation in order to find out whether or not working with the module influenced their pronunciation performance, focusing on the six error type categories. The qualitative data records the pronunciation level of the student. It is related to the frequency of occurrence of each error type category. The data were gathered from two reading tasks. Both texts were designed to measure how many mistakes students had made in the six error type categories dealt with in the CAPTT.

For every error type category a one-way ANOVA with repeated measures was carried out using SPSS, software release 2.3. Normality of the distribution was tested for all dependent variables (i.e., error type categories) separately. In all cases, using Kolmogorov-Smirnoff and Shapiro and Wilk, no deviations from normality could be detected. A test for sphericity was not carried out as such a test makes no sense when the within-subjects treatment factor has two levels only (Hancock & Mueller, 2010), as is the case in the present experiment. Since the error type categories are interesting in their own right and should not be considered to measure an underlying construct, a multivariate analysis of variance was not considered (Hancock & Mueller, 2010).

4. Results

All differences in the number of mistakes made differ significantly from the value of zero that is expected under the null hypothesis. That is, all p-values except for the error type category 'linking r' are significant at  $p > 0.001$ ; the value for linking r is still significant at  $p = 0.018$ . However, since the subjects are tested repeatedly, once for each dependent variable (error-type category), it is necessary to compensate for the family-wise error. Doing so using the customary Holm-Bonferroni stepwise testing procedure (Hancock & Mueller, 2010) does not alter our conclusion: all differences remain significant at the customary alpha level of 5%. Table 4 shows the pre- and post-test means, as well as their 95% confidence intervals.

Table 4 Comparison of Error Types in Pre- and Post- Tests

Error Type	Pre	Post	Average Decrease	95% CI	Partial Eta <sup>2</sup>
aspiration	4.27	2.46	1.81	1.44 - 2.19	0.87
bed-bad	3.44	2.17	1.27	0.83 - 1.71	0.73
oak ook	4.47	3.47	1.00	0.69 - 1.30	0.93
th voiceless	2.81	1.81	1.00	0.61 - 1.39	0.64
th voiced	3.43	2.43	1.00	0.65 - 1.35	0.81
linking r	3.31	2.89	0.43	0.08 - 0.78	0.87

From an education perspective, the size of the decrease is a more interesting statistic. With the exception of linking r, the reduction is in the order of one to almost two fewer mistakes, which is meaningful in view of the fact that about 3 mistakes are made before the training was given. Partial eta squares, which were computed for error type categories, underscore this conclusion as all values are well within the range of what is considered a 'large effect' (Grissom & Kim, 2005; Pallant, 2016). It seems fair to conclude that our training did make a difference of an educationally interesting size.

5. Discussion

With the one-way ANOVA test results we can reject the null hypothesis:

(H<sub>0</sub>): *There is no significant change in the number of pronunciation mistakes Dutch learners of English make in the six error type categories selected before and after working with the CAPTT.*

In Figure 1 the post- intervention test shows improvement in student achievements for all the error type categories. Table 4 shows the largest effect size for the error type category aspiration and the smallest for the error type category linking r, although comparisons between error type categories should be treated with caution as no statistical tests could be carried out for these contrasts.

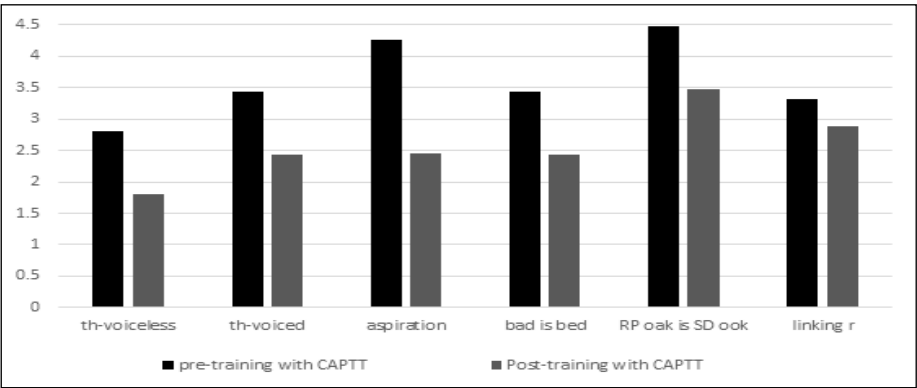


Figure 1. Means of mistakes made by the subject group (70 students) per error type category before and after working with the CAPTT.

The error type category no linking r in general shows minor (and for some students even negative) results, meaning that the CAPTT did not improve students’ achievements for this error type as it did for the others. Indeed, for certain students it even caused them to make more mistakes than they made prior to working with the CAPTT. After having a closer look at the pronunciation of the r and the linking r in both pre-intervention test phases, we discovered that many students pronounced a word-final r (as if they were all rhotic, i.e., finally pronounced, as in for example ‘General American’).

The CAPTT explains when to pronounce and not to pronounce the r in standard British pronunciation (RP). As a minor detail the pronunciation of linking r is discussed in the CAPTT. Some students who pronounced a rhotic r in the pre-intervention tests, focussed on not producing any final r in the post-intervention test as they were aiming for a British accent. While focussing on the final r in the reading text they would ignore checking whether the next word started with a vowel sound, which would demand (in RP) the pronunciation of the r to link words ending on an r with words starting with a vowel (which is the function of linking r; e.g., “the far east” /ð ə fɑ: r i: st/). In the pre-intervention test these students pronounced any r they would come across, automatically pronouncing linking r when needed, without realising when or when not to pronounce the r (if the aim was RP pronunciation). Hence, the even sometimes better results in the pre- intervention test for linking r, as they would automatically produce the r. So although those students might have gained more knowledge on when not to pronounce the r in RP, the way CAPPT tests linking r apparently confused students.

We do not claim that working with our CAPTT changes the students’ pronunciation in one or two sessions. Students do not immediately enhance their intelligibility or sound more native-like after working with the CAPTT. What the CAPTT does is create awareness of where students often go wrong, what the mistake sounds like, and how to alter this by focussing on the articulators. Students were only briefly introduced to the six error type categories and had only one session to practise an error type. The moment they record the post-intervention reading task, they are focussed on the mistakes they practised while using the CAPTT and they are aware of their own pronunciation difficulties. The recording does not automatically represent a student’s pronunciation in further communicative situations. However, the recording tasks help students to notice what they are doing (Flege & Wang, 1989). It is up to the teachers to build upon this awareness and to devote time to pronunciation in various classroom situations, even when dealing with subjects such as grammar or literature. The CAPTT helps to identity a student’s pronunciation difficulties, and that enables teachers to provide specific feedback. We believe that awareness is the first step to improvement. A symbiosis between creating awareness—that is, where the CAPTT comes in—and teacher motivation and ability to deal with pronunciation—which the CAPTT might enhance—will improve a student’s pronunciation skills, and that beyond intelligibility.

## 6. Conclusion

The CAPTT was designed to be as user-friendly for teachers and students (Derwing and Munro, 2005), as time and cost-efficient, and as focussed on students' specific needs (Hermans & Sloep, 2015) as possible. We believe that any CAPTT that enables students to focus on their specific L2 needs, and that is able to take away a teacher's or student's possible resistance to use ICT, will positively influence students' achievements. It is, however, not enough to present a CAPTT and expect students to improve their pronunciation sustainably. Further practice and teacher feedback are necessary to turn awareness into sustainable improvement. A CAPTT—like the one used in this research—could be a first building block for students (awareness) and a first pedagogy for teachers to teach pronunciation. Further building blocks are needed to turn awareness into sustainable improvement. We are well aware of the fact that this is not an approach to be used by teachers teaching students who are not able to use L2 intelligibly yet. However, we are confident that the pedagogy suggested and the basic principles of the designed computer assisted pronunciation tool, can be used for every L2 being taught, as long as the instructor is aware of the students' needs and the most common L1 phonological interference on the taught L2.

## Chapter 4

### Teacher professional development in the context of teaching English pronunciation<sup>5</sup>

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5) Chapter 3 is the verbatim text of: Hermans, F & Sloep, P and Kreijns, K (2017). Teacher professional development in the context of teaching English pronunciation. *International Journal of Educational Technology in Higher Education*, DOI 10.1186/s41239-017-0059-9.

## Abstract

In this chapter we focus on the effects of an intervention aiming to improve the English pronunciation skills of secondary school students in the Netherlands. In order to implement a new pedagogy successfully it is of the essence to take into account how teachers learn and what motivates them to adapt and change their way of teaching. Teachers need time to test and adapt a teaching design to fit the needs of their classroom practice and the students' needs. In this paper the main focus is on finding evidence of teacher professional development in teaching English pronunciation. Results show that teachers are extrinsically motivated to change their teaching behaviour and classroom practice after using a computer assisted teaching tool to teach English pronunciation.

## 1. Introduction

### 1.1 Teacher professional development

Research shows that teacher quality is significantly and positively correlated with student attainment and that it is the most important within-school aspect explaining student performance. Its effects are much larger than the effects of school organisation, leadership or financial conditions (Hattie 2009, 2012; Meiers and Ingvarson 2005; Veen, Zwart, Meirink & Verloop, 2010).

Hattie (ibid.) indicates that six sources influence a student's achievement: 50% is what the student is capable of bringing to the table himself. Other sources are home situations, schools, peer influences and principals, which altogether make up 20%, leaving a staggering 30% to teachers. So investing in teachers is the most important external key to influence students' achievements (Fig. 1).

Laurillard (2012) and Mor and Mogilevsky (2013) see the teacher as the initiator of defining an educational challenge and of the conceptualisation of its solution. This, however, means that certain conditions at a teacher's workplace should already be met before this first step can be taken. School leaders should have already facilitated teachers in a way that they are able to devote time to thinking about an educational challenge they would like to address, without being hunted by the school's curriculum and short-term students' achievements. For most secondary school teachers in the Netherlands the situation of the day-to-day practice of teaching (and the curriculum) leaves no room for in-depth research and design initiatives.

In this study we explore the process of teacher professional development and the effect of implementing a new teaching design on the behaviour of teachers. This takes place in the context of teaching English pronunciation to secondary school pupils (who from now on we refer to as students) and students at schools for intermediate and higher vocational education (universities of applied sciences) in the Netherlands.



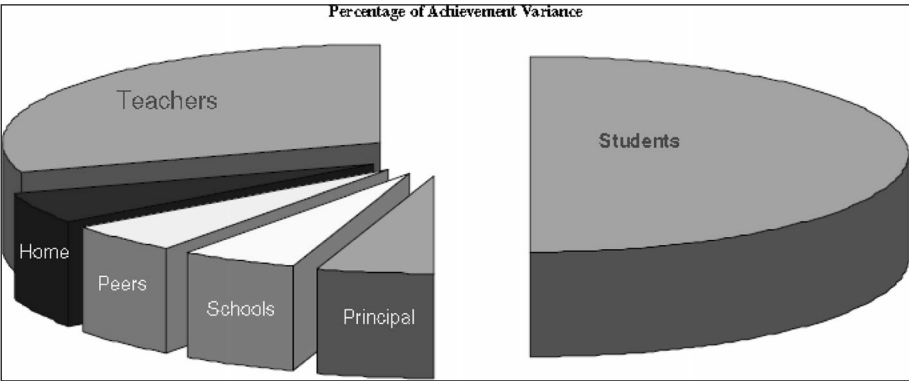


Fig. 1 Percentage of achievement variance

1.2 Context of the case study

In Hermans and Sloep (2015), speech data provided by secondary school students and bachelor students studying at a university of applied sciences was analysed in order to determine the error types most frequently occurring in the English pronunciation of most of the Dutch pupils and students. Six error types (Table 1) were present in the pronunciation of more than 50% of the target group in more than 50% of the cases in which a mistake in those error type categories could be made.

**Table 1** Error types that are made by more than half of the students in more than 50% of the cases in which such a mistake could be made in the tests set to the students

rang	error type	Number of students making a particular error	percentage of errors of a particular kind made by the subject group
1	voiceless th(θ) is /d/	22	85.0
2	no aspiration /p, t, k/	20	82.7
3	Bad is bed /æ/ is /e/	20	69.8
4	θ, is t,f,s	19	75.6
5	r + no linking r	19	65.2
6	/əʊ/ is Dutch /o/	13	54.0

In this study we aim to gain data on how teachers learn and change their classroom practice, on how they implement a new pedagogy, and on what motivates them to take

part in experimenting with and implementing a new teaching tool. The context of the experiment is English pronunciation teaching in EFL lessons in the Netherlands. A pedagogical approach was designed and EFL teachers were asked to take part in the test phase of the design. They were asked to test the design in their classrooms and to suggest alterations to the design in order to adjust the materials to fit their classroom situation. Our research question is:

*Can we provide evidence of teacher professional development by involving teachers in an intervention phase, implementing a pre-structured teaching design?*

We focus on evidence of teacher motivation, leading to signs of professional development and changes in teacher attitude concerning their classroom practice. We also seek to learn about the teachers’ opinions concerning the intervention tool and their ideas on how they would like to professionalise.

2. Method

2.1 Test phase 1

Based on previous research (Hermans & Sloep, 2015) a Computer Assisted Pronunciation Teaching Tool (CAPTT) was designed and implemented in a dedicated website, using Liferay Portal EE (<http://www.liferay.com>). It provided students with seven chapters: one introduction on the topic of English pronunciation and six chapters covering six error type categories. The instructions were in Dutch to avoid any possible confusion. The only computer skills needed for students was knowledge about how to click and go to the next step. The recording tasks required a mobile phone or a tablet (voice recorder) and Wi-Fi in order to send the recordings to the teacher or the principal investigator (PI). Most phones and tablets have a standard voice recorder installed. Next to that there are plenty of voice recorders which can be downloaded for free. With a laptop, phone or tablet and an Internet connection the online module could be used.

Teachers were provided with a code and a password to be able to access the teacher area of the website. The teacher area provided them with background information on phonetics

and pronunciation, test materials and keys to all of the assignments. Once the link to the website was opened, the teacher only had to instruct the students once by pointing out where to start. The instructions were all self-explanatory and the teacher's role, once the module was running, was more of a guide than a teacher. With the background information on phonetics and pronunciation and the recording tasks a teacher could give feedback to students on an individual basis or in group sessions. No further ICT skills were required.

The website made use of a straightforward format with text information and embedded videos. The contents only focused on the necessary information needed to improve students' English pronunciation in the six error types categories. Since the website only required limited and basic technical options, there was no need to charge schools for using the CAPTT. In the Netherlands students without a mobile phone are the exception. Using the mobile phone or a tablet as a recording device is a cost-effective way to gather sound data. A student without a phone or tablet could always borrow a fellow student's phone to record a task in class. As most schools in the Netherlands (and all the schools involved in this research) have free Wi-Fi, students incurred no costs with gathering their sound data that were sent to the PI via Email.

The website only offered the necessary information to address the six error types. The module provided seven lessons covering error types most Dutch speakers of English students struggled with. Every error type category was introduced with textual information supported by video files, followed by recording tasks and practice materials. There were no side tracks and there was no unnecessary extra information or technical options added to the necessary information to be learnt about the selected difficulties in pronunciation. All of the lessons set achievable goals for students.

## 2.2 Treatment procedure

Teachers were offered the basic background information on phonetics necessary to provide students with information and specific articulatory information concerning the six error type categories. Students were also provided with some background information on some of the phonetic symbols used, only to point out the difference between certain

phonemes that are difficult to distinguish by Dutch speakers of English (e.g., the difference between voiceless th /θ/ and voiced th /ð/).

The students were asked to shadow (and record) the words and sentences after hearing them pronounced in the videos in class. The auditory speech was enhanced by visual aspects of articulation (Dias & Rosenblum, 2016) to enhance phonetic convergence.

The recording tasks allowed teachers to give more individual student feedback. Students were able to analyse their own pronunciation by listening to their own recordings following a given evaluation format. Teachers were able to analyse the pre- and post-intervention test according to the same format the researchers were using and discuss this with their students.

The pre- and post-intervention test provided data on student results before and after working with the CAPTT. Specific texts were designed in which all error type categories were equally represented. A strict protocol was handed out to three analysts who looked into the sound files individually and then compared the results.

Teachers received a strict procedure on how to present the CAPTT. The procedure prescribed the order of presenting the chapters concerning the six error type categories. Every teacher received an individual instruction for the order of dealing with the various chapters in order to minimize the effect of error type categories being dealt with first or last, on the end result of the sampled group. The teachers were also instructed to only use the CAPTT's introduction to introduce the topic (English pronunciation) and to use no more than five minutes to introduce each chapter, using the background information on phonetics provided by the CAPTT in the teacher's section. For the pre- and post-intervention test there was a strict procedure as well. The teacher's role was one of facilitating (essentially run the CAPTT) and providing guidance only if necessary (and so not one of traditional instructing and teaching).

All of the CAPTT's tasks were self-explanatory so students could work at their own pace. With these strict procedures the aim was to minimize the effect of teachers (i.e., their personal interests, attitudes towards the teaching topic, back- grounds, skills e.g.,) on the results of the post-intervention test. Minimizing the teacher's input enhances the validity of the CAPTT's effect on the post- intervention results.



2.3. Subject group test phase 1

Teachers were invited to participate via email and were asked to take part in a test phase of a newly developed teaching approach for teaching English pronunciation. Initially 17 teachers spread over five schools agreed to take part in an introductory meeting. Five teachers at a school for the higher vocational training were aligned with the teacher training college and taking part in the test phase was part of their teaching task. One of the teachers, working at the PI's home institution, was also teaching at a school for intermediate vocational education and she decided to use the new design there too.

During the introductory meeting the educational challenge was explained and teachers were informed about the newly designed teaching approach dealing with the six most occurring pronunciation mistakes made by Dutch speakers of English. Teachers were told that the first test phase would take place from September 2014 until December 2015.

In July 2014 23 teachers received a letter with information about the setup of the test phase. The mail included the necessary access codes and information to be able to use the online module (CAPTT) *Do your students sound English?* They also received a strict protocol, explaining how to work with the module, in order to make sure all teachers followed the same procedures. The protocol included a procedure for a pre-intervention test to establish the students' skills before working with the module and a post-intervention test after working with the module, in order to measure possible student improvements. Seven lessons of 50 minutes each had to be scheduled by the teachers themselves in order to teach all the topics of the module. The start of the test phase was 1 September 2014 and 30 December 2015 was the end point.

On September 1st 2014 all teachers received an email to remind them of the starting point of the test phase and to wish them good luck with using the online module. Twelve teachers either failed to respond to any further emails, did not use the module due to personal circumstances or a lack of teaching time, or failed to hand in the final post-intervention test results. In the end eleven teachers taught the seven lessons of the CAPTT and handed in the pre- and post-intervention test results (similar test covering the six error type categories before and after working with the CAPTT in class).

The EFL teachers (n = 11) followed in this case study were not actively involved in teacher professional development activities in this field and there was no ongoing collaboration of teachers working on an educational challenge in order to improve students' achievements concerning English pronunciation. None of the teachers were actively involved in research activities at the time. Table 2 provides information on the individual teacher's age, teaching degree, years of experience, the school-type he/she teaches at, and their first language background in test phase one. To protect their privacy names are fictional.

Table 2 details subject group teachers test phase 1

Teacher	Age	Degree	experience	school	l1 background
Lukas	29	bachelor (studying for master)	7	Higher voc. ed.	Dutch
Andrew	28	Master	7	Higher voc. ed.	Dutch/Moroccan
Suus	46	Master	19	Higher voc. ed.	Dutch
Frank	46	Master	24	Higher voc. ed.	Dutch
Anny	37	bachelor (studying for master)	5	Higher voc. ed.	Dutch/Swedish
Boy	43	studying for bachelor	7	Secondary education	Dutch
Jacky	39	Bachelor	13	Secondary education	Dutch/English
DeeJay	51	bachelor (studying for master)	20	Secondary education	Dutch/Moroccan
Katrien	34	Bachelor	12	Secondary education	Dutch
Lidy	52	Master	28	Secondary education	Dutch
Linda	26	Master	3	Intermediate voc. ed.	Dutch

2.4 Data collection test phase 1

All the parents of the students aged under 18, that were recorded in a pre- and post-intervention test (in test phase 1 and 2), received a mail from their teachers or headmaster, explaining the purpose of the research. The procedures were explained and it was pointed out that participation was on a voluntary basis. Participants older than 17 received a similar mail from the PI, explaining the purpose of the research and the procedures. The results of the pre-intervention test of 70 students (70 recordings randomly chosen out of 162 available recordings) were set against the results of the post-intervention test. The analyses of the sound data was done by the PI and two assistants. The inter reliability rate was high at,871 .

All the teachers who took part in the first test phase were invited to take part in a semi-structured interview. One teacher could not find the time for an interview. Nine teachers were interviewed (individually, semi-structured interview) at their school and one teacher agreed to be interviewed at his home. The interview questions allowed the teachers to narrate their thoughts on the teaching topic (teaching English pronunciation), their former teaching activities concerning teaching English pronunciation, using the new teaching design and their own professional development. For this paper we focussed on the topic of teacher professional development. The interview questions directly related to Teacher Professional Development (TPD) were:

1. *Were you teaching pronunciation in your EFL-lessons before working with the CAPTT? (If so, how were you teaching pronunciation?)*
2. *Has your approach and attitude towards teaching pronunciation changed after working with the CAPTT?*
3. *How did you adjust the approach to fit your classroom practice?*
4. *What are your suggestions for improving the CAPTT so it would better meet your and your students' needs?*
5. *What would be the best teacher professional development method for you as an EFL-teacher?*

The aim after test phase 1 was to find out about the teacher's experience working with the CAPTT and to gain input on how to adapt and improve the intervention tool (CAPTT) so it would better meet the teachers' and students' needs in a classroom situation.

Data were analysed in two stages. In the first stage one researcher analysed the transcriptions. An analysis (Patton, 2002) was performed identifying interview fragments on the basis of categories derived from the research questions as sensitizing concepts (Strauss & Corbin, 1990). Interviews were analysed for the teachers' feedback on the teaching design, their personal standpoint towards the necessity of the intervention, changes in their attitude towards teaching pronunciation (signs of professional development) and willingness to take part in design inquiry activities themselves.

## 2.5. Test phase 2

Based on the outcome (students' results), feedback and teaching experiences from teachers (and students), gathered after the first test phase, the teaching design was reviewed and slightly adapted in order to be tested again to find out whether teachers' and students' feedback and idea-input had improved the design, led to better student results and showed proof of significant teacher professional development.

## 2.6 Subject group (teachers) test phase 2

In the second test phase the same procedure was followed as in test phase 1. All the teachers involved in the first test phase agreed to take part in the second test phase as well. Additionally, four new teachers teaching bachelor students took part and three left because their teaching contract ended, leaving a total of six teachers. Nine additional secondary school teachers from three additional schools agreed to take part after an introductory presentation. September 1st 2015 was indicated as starting point of the test phase and February, 15th 2016 as the rounding off date.

All the teachers (six) teaching bachelor students sent in the post-intervention test before the deadline. Of the 15 secondary school teachers seven teachers met the deadline. Two teachers never responded to any of the PI's mails before and after the deadline. The remaining teachers all answered the PI's mail in which they were asked for the post-intervention recordings, claiming they did not find the opportunity to round off or even present the CAPTT due to circumstances. Finally four new teachers teaching bachelor students and four new secondary school teachers taught the seven lessons and handed in the pre- and post-intervention test results of the second test phase. Two teachers teaching bachelor students and three secondary school teachers, who all took part in the first test phase, also taught the seven lessons and handed in the pre- and post-intervention test results of the second test phase. In the end 13 teachers completed working with the module as planned. Table 3 provides information on the individual teacher's age, teaching degree, years of experience, the school-type he/she teaches at, and the L1 background in test phase two. To protect their privacy, names are fictional.

**Table 3** Details subject group teachers test phase 2

Teacher	Age	Degree	experience	School	l1 background
Lukas	30	Master	8	Higher voc. ed.	Dutch
Andrew	28	Master	8	Higher voc. ed.	Dutch/Moroccan
Sergio	35	Bachelor	2	Higher voc. ed.	Dutch
Bo	26	Bachelor	3	Higher voc. ed.	Dutch
Sanna	36	Bachelor	7	Higher voc. ed.	Irish
Amy	31	Master	5	Higher voc. ed.	Spanish
Jacky	40	Bachelor	14	Secondary education	British
Simon	53	Master	6	Secondary education	Dutch
DeeJay	51	bachelor (studying for master)	21	Secondary education	Dutch/Moroccan
Katrien	35	Bachelor	13	Secondary education	Dutch
Lizz	27	Bachelor	5	Secondary education	Dutch
Danny	32	Bachelor	8	Secondary education	Dutch
Ella	27	Master	3	Secondary education	Dutch

2.7 Data collection test phase 2

The results of the pre-intervention test of 60 students (60 recordings randomly chosen out of 222 available recordings) were set against the results of the post-intervention test. For test phase 2 we followed the same procedures as for test phase 1 (See 2.3). Additionally we adopted Fishbein’s Integrative Model of Behaviour Prediction (Fishbein and Yzer 2003; Kreijns, Vermeulen, Kirschner, Buuren and Acker, 2013) in order to gain data on dispositional variables including attitude, self-efficacy and subjective norm influencing teachers’ motivation to take part in an experimental teaching design using a CAPTT.

3 Results

3.1. Test phase 1: interview

After the interview analysis quotes were categorised. All teachers considered the module to be useful and were willing to use the teaching design again in the second test phase.

One teacher however, demanded a less strict procedure for working with the module, as she thought some parts in the teaching design were too easy for her students and she wanted to be able to skip tasks to speed up the teaching process. Another teacher disagreed with the statement that a good pronunciation increases the credibility of the speaker. He was only interested in the module because of the intelligibility aspect. Almost all the teachers wanted to have the ability to evaluate their own students and missed test materials and repetition tasks in the module.

All the teachers struggled with teaching pronunciation in the past. One teacher claimed that she had always focussed on pronunciation in the past and that she had corrected students on the spot, but that she had never used a structured approach before. Eight teachers admitted they had never really paid attention to teaching pronunciation (except for the occasional attention given to the th-sounds) before working with the module. The teachers teaching bachelor students were used to dealing with pronunciation in their lessons as their subject was mainly teaching English speaking skills. However, none of them had a specific teaching approach for this. They corrected students when they took turns in speaking activities and focussed on a student’s individual pronunciation mistakes only. The speaking activities allowed students to speak a lot amongst each other but were not really useful for individual feedback. The opportunities for individual feedback were limited. The teachers welcomed the structured approach. For them a very important positive aspect was the introduction of using cell phones and tablets to record students’ pronunciation performances. Teachers were now able to listen to a student’s performance more often, which allowed them to give accurate feedback and analyse the performance together with the student. Two teachers indicated they were using the recording devices for other tasks now. One teacher, who was practising a play (in English) with his students, started to record sessions to work on students’ use of intonation (Table 4).

All of the teachers were very eager to advise the researchers on how to improve and adjust the intervention tool to make it more suitable for personal classroom usage. One teacher did not really have a good Internet connections in the classroom and wished for the online materials to be available on paper too. One teacher disliked the fact that the instruction language was Dutch, and for that reason not really suitable for her students following the bilingual course (most subjects taught in English). She wanted an English version of the module. Almost all the teachers missed the chance to evaluate their students themselves and give personal feedback on their students’ performances. They

also wanted more repetition in the materials and more freedom in how to work with the materials. They wanted to break free from the strict procedures. They also felt a desire to inform all of their students about the progress in their achievements.

**Table 4** Categories as sensitizing concepts based on research questions test in phase one

Categories	examples of quotes by teacher
feedback intervention design	The module fits my students' needs. (Deejay)
	Students love to sound British. (Lidy)
	75% of my students showed improvement. (Jacky)
	I do believe that with the right approach Dutch students can sound become more native-like. (Jacky)
	It is nice to have a limited set of pronunciation error types to start with. (Katrien)
	I do consider the presented error types in the module to be the most important ones and see no need to put in more. (Boy)
	This module is a good starting point for me to teach pronunciation. (Any)
need for intervention	I particularly like the structure of the teaching approach which makes it easy to teach. (Deejay)
	I do believe accents influence the credibility of the speaker. (Jacky)
	Good pronunciation is important to enhance a learners' intelligibility. (Andrew)
	The only time I was involved in aspects dealing with pronunciation, was when I was studying phonetics. (Lucas)
	I never thought pronunciation as the course books do not offer any materials to do so. (Katrien)
	My pronunciation deteriorated once I left the teacher training college and started teaching secondary school students. (Katrien)
change in attitude (TPD)	Pronunciation and credibility go hand in hand (Linda)
	In secondary school I never thought pronunciation though <u>its</u> obvious that its important. (Lucas)
	I started using the recording device for other EFL tasks too. (Deejay)
	Working with the module was like a wake-up call for myself as a teacher. (Katrien)
	Teaching pronunciation was never on my mind as I did not know how. Now I know where to start. (Suus)
	This module gives me a teaching approach for something I did not know how to teach before. (Jacky)
	I'm more aware of my own pronunciation now because of working with the module (Andrew/Katrien)
	I needed the module to get me started with teaching pronunciation, which I've always considered to be important. (Boy)

attitude towards professional development	I need to invest more time in teaching pronunciation (Deejay)
	I am only interested in teacher professional development projects if I can anticipate better result for my students. (Lucas)
	I would not like to do research myself, even given time. (Suus)
	I have no time for research myself. (Katrien)
	I'd rather create lesson materials than being involved in research activities. (Jacky)
	I'd rather professionalise on my own by reading research papers and books (Andrew)
	I'm only interested in professional development projects if what I learn can be put to practice immediately. (Boy)
	I need to be convinced that my student will benefit from what I learn before getting involved. (Lidy)

3.2 Test phase 2: interview

After the interview analysis quotes were categorised. We were most interested in signs of change in teacher behaviour and professional development. We were also interested in signs indicating teachers might have had some reservations towards working with the CAPTT and the need for the intervention. As we did not receive any response to three mails asking teachers to get involved using the online feedback tool (sharing experiences with peers), and with the experience of test phase 1, we assumed there was no interest in sharing information with peers using the CAPTT option for this. There were no more questions asked concerning this topic during the interview. As test phase 1 already provided us with data on how teachers prefer to be professionalised, and because most of the teachers were also working in test phase two, and we had another longer set of questions for teachers to fill in, concerning teacher motivation, we did not ask questions about preferable ways of professionalising in test phase 2 (Table 5).

Nine out of thirteen (13 = n) teachers indicated they altered their classroom practice, devoting more time to teaching pronunciation and feeling better equipped to do so than before taking part in the experiment. Ten out of 13 teachers commented on the intervention being important. Eight teachers considered a good pronunciation to be related to the credibility of the speaker. Only three teachers commented on the quality of the CAPTT. There were two teachers, Andrew and Deejay, with a



Dutch/Moroccan background. Andrew was born in the Netherlands and DeeJay was born in Morocco, but has been living in the Netherlands for 20 years. Andrew spoke negatively about the link between a good pronunciation and credibility, and argued that native speakers should not judge on the basis of accent but on the basis of content. He was only interested in improving students’ intelligibility and did not want his students to loose part of their identity while struggling for a near-native English pronunciation. DeeJay considered both credibility and intelligibility to be important, but was also more interested in the intelligibility part. There were two native English speaking teachers who both considered good pronunciation to be positively influencing the speaker’s credibility.

**Table 5** Categories as sensitizing concepts based on research questions in test phase two

Categories	examples of quotes
feedback intervention design	<p>The six error type categories were very clear and useful. (Simon)</p> <p>Working with the module was easy and did not take a lot of time. (Danny)</p> <p>The CAPTT is well structured. (Deejay)</p> <p>The videos were very enlightening. (Danny)</p> <p>Well-chosen lesson materials. (Deejay)</p>
need for intervention	<p>I do thing that a better pronunciation enhances the credibility of the speaker. (Bo)</p> <p>I thought less of my English teachers when their English pronunciation wasn't near native like. (Ella)</p> <p>I do consider a good pronunciation very important for my pupils, especially for their follow up studies at university. (Ella)</p> <p>I good pronunciation leads to more credibility. (Sanna)</p> <p>A good pronunciation is important and the speaker will be taken more seriously. (Simon)</p> <p>I am well aware of the importance of pronunciation, but I realise I should work on it sooner. (Simon)</p> <p>It's also <b>still</b> important because of intelligibility. (Deejay)</p> <p>I do consider teaching pronunciation to be very important and we need to devote more time to it. (Sergio)</p> <p>A good pronunciation immediately determines what you think of the speaker's intelligence. (Jacky)</p> <p>The listener will automatically judge a speaker on his pronunciation or accent (Andrew)</p> <p>I think that near-native pronunciation is only affecting the speaker's credibility when he's speaking to a native speaker. (Lizz)</p> <p>A good pronunciation comes with a good first impression. (Sanna)</p>
change in attitude (TPD)	<p>I pay more attention to the pronunciation mistakes students make in dass. (Bo)</p> <p>I correct students more when I notice them making the mistakes we discussed in the CAPTT. (Ella)</p>

I teach more pronunciation than before working with the CAPTT. (Jacky)

I am more interested in the pronunciation mistakes my students make. (Sanna)

Even when I teach grammar or other things, when I speak with friends or watch TV I focus more on pronunciation. (Sergio)

Pronunciation is on my mind even if it's not the focus of the EFL lesson. (Deejay)

I pay more attention to my own pronunciation now. (Andrew)

I'm more aware of my own pronunciation after working with the CAPTT (Bo)

I didn't do a lot of pronunciation teaching, but now that I have these materials I feel I can actually teach pronunciation. (Simon)

Teaching English at this level doesn't improve your own pronunciation. This CAPTT made me focus more on my own pronundation. (Simon)

I learned a lot myself, using the CAPTT. (Sergio)

I became less accurate with my own pronunciation through the years, but teaching pronunciation helped me to focus on my own performance again. (Katrien)

3.3 Test phase 2: Integrative Model of Behaviour Prediction

In order to measure teachers’ motivation to use the CAPTT we used a measure that was derived from the Perceived Locus of Causality measure (PLOC) of Ryan and Connell (1989); we refer to this as the adapted PLOC measure or for short a-PLOC. This measure assesses different types of motivation that regulate behaviour as defined by the Self-Determination Theory (SDT) of Ryan and Deci (2000). In short, SDT distinguishes between intrinsic and extrinsic motivation. Intrinsic motivation is concerned with the enjoyment and challenges the engagement with an activity or object (i.e., CAPTT) gives. Extrinsic motivation encompasses four types of motivation that vary in their degree of autonomy. From highest to lowest autonomy these four types are: integrated, identified, introjected, and external motivation. Integrated motivation means that the engagement is in complete harmony with the self. Identified motivation means that the engagement is seen as important or beneficial. Introjected motivation refers to the engagement as a consequent of feeling of guilt and shame when engagement is not done. Finally, external motivation means that there were rewarding and/or coercive powers that force someone to be engaged. Next to intrinsic and extrinsic motivation is a-motivation which in essence means that one admittedly engages with an activity or object but without any intention.

The a-PLOC measure assesses each type of motivation to use the CAPTT. Thereby, intrinsic motivation has two dimensions, namely affect and potency. Whereas affect refers to the fun and enjoyment, potency refers to the challenging and stimulating aspects of the engagement. Items of a-PLOC were all rated using a 7-point Likert scale with endpoints ‘always false’ (1) and ‘always true’ (7). The results of the administration are shown in Table 1. As can be seen, Chronbach’s alphas were all satisfactory (Table 6).

**Table 6** A-PLOC measure

nr item	Item	M	SD
intrinsic affective; Cronbach's alpha = .95			
1	is fun	4.67	1.44
2	is pleasant	4.92	1.24
3	is exciting	4.08	1.56
4	is fascinating	4.08	1.51
5	is enjoyable	4.75	1.22
intrinsic - potency Cronbach's alpha = .76			
1	is interesting	5.58	1.00
2	is challenging	4.67	1.61
3	is energizing	4.00	1.04
4	is absorbing	4.67	1.07
5	is stimulating	4.75	1.29
integrated; Cronbach's alpha = .95			
1	suits my preferred way to learn new skills	4.67	1.30
2	is compatible with how I usually want to improve my skills	4.50	1.51
3	fits my teaching style	5.00	1.21
4	fits my beliefs about how students learn	5.00	1.48
identified; Cronbach's alpha = .85			
1	is useful to me	5.58	1.38
2	is meaningful to me	5.36	1.43
3	makes me confident	4.75	1.49
4	is productive to me	5.00	1.28
5			
6	will help me	5.00	1.28
introjected; Cronbach's alpha = .93			
1	I want others (eg., my colleagues, my students) to think I am a smart person	2.08	1.62
2	I want others (e.g., my colleagues, my students) to be satisfied with me	3.50	2.51

3	I want to give the impression that I am doing the sensible thing	2.83	1.75
4	otherwise I would feel ashamed of myself	1.75	1.36
5	otherwise I would feel guilty of not doing so	1.92	1.73
6	otherwise I would feel bad about myself	2.00	1.95
extrinsic; Cronbach's alpha = .78			
1	will give me credits for my professional development targets	3.75	1.91
2	will cause me not to look bad in my professional environment	3.42	1.98
3	will cause some people not to become angry with me	1.92	1.51
4	will avoid poor future perspectives	2.67	1.61
amotivation; Cronbach's alpha = .88			
1	but I really have no desire to do so	1.92	1.62
2	although I think it is a waste of time	1.50	1.00
3	but personally I give no priority to that	2.33	1.56
4	although I would prefer to do other things	2.58	1.83
5	but actually I don't see the point of it	1.75	1.49
6	but in fact I have no energy for it	1.75	1.06
7-point Likert scale; 1 = 'always false'... 7 = 'always true'			

(n=12)

We also measured teachers’ intention to use the CAPTT. Behavioural intention is defined as “an indication of a person’s readiness to perform a behaviour” (Fishbein and Ajzen, 2010). Intentions are seen as a proxy for actual behaviour; that is, actually using the CAPTT. However, it should be noted that the relationship is not perfect. The instrument to measure behavioural intention is constructed according the guidelines given by Fishbein and Ajzen (2010). Items of intention measure were all rated using a 7-point Likert scale with endpoints ‘always false’ (1) and ‘always true’ (7). The results of the administration are shown in Table 2. The Cronbach’s alpha was very satisfactory (Table 7).

**Table 7** Behavioural intention measure

nr item	item	M	SD
intention - willingness; Cronbach's alpha = .94			
1	I intend to use the CAPTT in my teaching in the future	5,83	1,34
2	I am pretty sure I'm going to use the CAPTT in my teaching	5,92	1,44
3	I think I'm going to use the CAPTT in my teaching	5,67	1,67
4	I am willing to use the CAPTT in my teaching	6,17	1,19
5	I'm definitely going to apply the CAPTT in my teaching	5,58	1,68

7-point Likert scale; 1 = 'always false'... 7 = 'always true'

(n=12)

To investigate the relationships between the different types of motivation and the behavioural intention, Spearman correlations were calculated. What can be concluded from Table 8 is that apparently teachers intend to use the CAPTT because they find it interesting and challenging to use (potency) and also because they believe its use is connected with their identity as being a teachers (integrated) as well as that they find the CAPTT a useful tool. However, there is also an external force that pressures them to use the CAPTT (extrinsic).

**Table 8: Spearman correlations**

	1	2	3	4	5	6	7	8
1. willingness	1							
2. intrinsic – affect	.385	1						
3. intrinsic – potency	.600**	.844**	1					
4. integrated	.869**	.716**	.832**	1				
5. identified	.916**	.489	.787**	.873**	1			
6. introjected	.086	.338	.250	.153	.210	1		
7. extrinsic	.714**	.616*	.887**	.789**	.874**	.092	1	
8. amotivation	-.250	.074	.107	-.084	-.303	.415	-.043	1

\*  $p < .05$  (2-tailed)

(n=12)

4. Discussion and further research

Literature shows that there is limited evidence for the link between teacher professional development and student learning outcome (McRae, Ainsworth, Rowland & Zbar,

2000; Desimone and Le & 2004; Supovitz, 2001; Cohen & Hill, 2000; Thompson, 2003). In many studies on professional development programmes, teacher learning, the teacher's active role in the learning process (Little, 2006; Verloop & Kessels, 2006) and the conditions for professional development (Supovitz, 2001; Guskey and Sparks, 2002; Cohen and Hill, 2000) are described as key element for professional development programs to be successful. In our study we were more interested in the simplicity of the intervention tool and its effect on teacher behaviour and student outcome, paying less attention to the teacher's initial beliefs, expectations, content-knowledge, experience or learning conditions. For us the teacher's motivation to use the tool and follow our protocol was the starting point, in the hope that teachers would be motivated to copy strategies provided by the tool even when teaching other aspects of the English language.

Ultimately, the goal was not to use the intervention tool itself, but to increase the teachers' motivation and improving the teachers' skills to teach English pronunciation following certain strategies. The initial, improved student outcome was supposed to work as an incentive for a teacher to change or adapt his or her teaching behaviour. So the initial evidence of better student outcome does not show the link between teacher professional development and student learning outcome but more the link between the use of the intervention tool (CAPTT) and better student outcome, with the teacher having had more of a facilitating role in test phase 1. However, teachers were asked to follow a strict procedure, asking them to briefly introduce each topic. For that purpose the intervention tool provided the teacher with a teacher's guide, aiming to build on the teacher's content knowledge (what to teach) but also on the pedagogical content-knowledge (how do students learn this best), which in many studies is considered to be eminent for improving and changing teachers' teaching practice and improving student learning outcome (Van Driel & Berry, 2012; Yoon, Garet, Birman& Jacobson, 2007; Borko, 2004).

About 70% of the teachers claimed to have adjusted their pedagogy concerning teaching pronunciation, feel more competent to teach pronunciation or focus more on their own pronunciation. For five of the six error type categories the post intervention test results showed a significant improvement in student achievement. With the teachers' statements about personal change and the improved student achievement we surmise to have provided evidence of teacher professional development by

involving teachers in an intervention phase in which a pre-structured teaching design is implemented and tested.

A crucial element of teacher participation in a cycle of evidence-based research is their belief in the beneficial outcome of the new approach for their students. The fact that they do not define the educational challenge and design the intervention tool themselves from the start, does not fit the ideal situation for inquiry based learning (Mor 2010; Anastopoulou, Sharpless, Ainsworth, Crook, Malley & Wright, 2012) but it does involve teachers, who state they do not have the time to invest in full research activities, in the process of implementing a new design, test it and consequently become involved in the second cycle of “devising new practices, plans of activity, resources and tools aimed at achieving particular educational aims in a given situation” (Mor and Craft 2012).

In our case study teachers showed various signs of professional development. For one, all teachers claimed they were able to teach pronunciation in a structured way for the first time. For some teachers it meant teaching pronunciation differently from how they did it in the past (incidentally correcting individual students on the spot versus teaching pronunciation in a structured way, reaching more students with the same difficulties in a classroom setting). For other teachers it meant teaching English pronunciation for the first time and feeling safe doing so because of the set-up of the teaching design. Four teachers claimed the intervention tool refreshed their own theoretical knowledge. Five teachers stated that they were more aware of their own pronunciation after rounding off the test phase.

Another aspect of the teachers’ professional development in this case study was the teachers’ ability to reflect on the practical implementation of the new teaching design. Teachers either adapted the materials to their own classroom needs or advised the designers on how to perfect the materials for classroom usage. The combination of initial research, designing the intervention tool, testing the tool with the help of the practitioners in the field who then provide the necessary feedback based on practical experience in order to improve the teaching approach, allows for a solid start of the second cycle of implementing and testing. Teachers were already aware of the students’ progress, which increased the motivation for implementing and testing the new design even further.

Compared to the student results after test phase 1, the student achievement did not significantly improve after adapting the CAPTT on the basis of teacher input in test phase 2. The adaptations to the CAPTT mostly concerned improving the time-efficiency aspect for teachers (flipping the classroom tasks to make sure students could do most of the work at home, so it would not take up too many classroom teaching hours). However, the teachers who took part in both test phases indicated that they would rather work with the adapted CAPTT as it was better structured, had more practice materials and was more time-efficient. Although student results in test phase 1 and 2 did not significantly differ, teacher satisfaction and motivation to use the CAPTT increased.

Involving teachers in a model of design inquiry (Mor and Mogilevsky 2013) or expecting teachers to adopt a design science attitude towards their practice (Laurillard, 2012) and make them responsible for identifying an educational challenge (Mor and Craft 2012) can only be successful if the teachers involved have the right motivation, a belief in the need to change, a positive attitude towards research activities, the support of their superiors, enough time to invest, research skills and peers to consult. A situation that meets all of these requirements is hard to find in the Dutch educational system, as teachers in secondary education teach an average of 25 lessons and are bound to strict protocols leading to final exams. The claim that there is not enough time for research activities is valid for most teachers. Next to that researchers and designers, when designing a new pedagogy or teaching tool, often have a perfect picture of a motivated teacher whose only goal in life is to improve his students’ achievements. In our study we noticed a (for us) surprising number of teachers who initially indicated to be interested to take part, received all the information and monthly mails, to finally fail to respond to any of the PI’s mails asking for the results. This all, in the light of a first successful test phase showing better student achievements.

We believe that when there is an educational challenge which exceeds the individual teacher’s classroom practice, it is sometimes wiser to drop the educational challenge top-down (What does the school need? Is there a national priority?), leave the design to researchers and educational experts, start involving teachers in the testing phase of the experimental intervention, and use their expertise and classroom experience to adjust the intervention tool or pedagogy.



Researchers and those responsible for education in general, who sometimes have a better overview of existing educational challenges, should always take into account that perfect teaching conditions are never met and that there is a significant number of teachers not able or willing to define educational challenges, design a new pedagogy and get involved in a full cycle of design inquiry. Involving smaller groups of teachers who are able to test and adjust a new pedagogy, might lead to a well-tested and classroom-adjusted pedagogy, which could influence a broader network of teachers and which could even reach those teachers who lack the motivation to get involved in a cycle of design inquiry. The stronger the new pedagogy and the easier to implement it, the more chance to also influence the teachers who find it hard to change their classroom practice.

Although the outcome of this intervention demonstrates improved teacher skills and student achievement, we realise that for further studies it is equally important to provide information on the sustainability of the Teacher Professional Development (TPD)-intervention. What happens if the necessity for active participation in the intervention programme is absent, the researchers and programme leaders are no longer visiting the workplace and there is no request for pre- and post- intervention data on student achievement and teacher skills anymore? It is important to find out how certain effects of TPD-interventions are embedded in a teacher's day-to-day classroom practice or school organisation. We need to detect proof of sustainability of any professional development programme and focus on which contexts for promoting professional development influence the sustainability of a TPD-project the most. For this purpose we plan to revisit all the teachers who were involved in the TPD-intervention programme one year after the final post- intervention test in test phase 2, in order to research which elements of the TPD-intervention are still present in the day-to-day teaching practice of the teachers. For this we will not only depend on the teachers' narrative by means of interviews and questionnaires, but also on student classroom experience concerning practising English pronunciation.

## Chapter 5

### Teachers' motivation to sustainably change teaching behaviour

## Abstract

The sustainable effects of a professional development programme were the focus of our study. The programme aimed to improve the English pronunciation skills of students in the Netherlands. We searched for signs of teacher change one year after the professional development programme had ended. After that year students still perceived elements of the programme in the classroom practice of their teacher. Ninety percent of the teachers proved motivated to adopt new teaching ideas and embed them in their classroom practice. However, lack of time and institutional support negatively interfered with their motivation to do so.

## 1. Introduction

Although several studies have shown the positive effects of teacher professional development (TPD) programmes on teacher skills (Gaikhorst, Beishuizen, Zijlstra & Volman, 2015; Garet, Porter, Desimone, Birman & Yoon, 2001; Timperly, Wilson, Barrar, & Fung, 2007), few studies link successful TPD to better student achievements (Thomson, 2003; Cochran-Smith & Zeichner, 2005), and even fewer focus on the sustainability of TPD programmes (Rogers, 2003; Snoek, 2015; Alvalos, 2011). Next to a change in a teacher's attitude, beliefs, knowledge, teaching skills and classroom practice—for a TPD programme to be successful—it should result in a sustainable positive effect on teacher practice and student achievement (Roesken-Winter, Schöler, Stahnke, & Blömeke, 2015; Zehetmeier, 2015).

Consequently, a TPD intervention might demonstrate improved teacher skills and student achievement, but it should also provide information on its sustainability. What happens if the necessity for teacher active participation in some intervention programme is gone, the researchers and programme leaders are not visiting the work place any longer and nobody is interested in pre- and post-intervention data on student achievement and teacher skills anymore? It is important, therefore, to find out if and how certain effects of TPD interventions become embedded in a teacher's day-to-day classroom practice or in a school's organisation. Ultimately, we need to detect proof of sustainability of a TPD programme and focus on contexts for promoting professional development that influence the programme's sustainability the most. In this paper we studied the sustainable effects of a particular TPD programme for teachers of English in the Netherlands. Our research question therefore was: *What evidence can we provide of sustainable change in teacher behaviour and classroom practice that results from a TPD programme?*

## 2. Theoretical framework

### 2.1 Sustainability

The context for our research into the sustaining impact of a TPD programme for English teachers in the Netherlands was formed by empirical findings from previous studies

(Hermans & Sloep, 2015; Hermans, Sloep & Kreijns, 2017; Hermans & Sloep, 2018). Borko (2004) indicated the various elements to describe TPD programmes: *Participating teachers, participating facilitators*, the TPD *programme* itself and the *context* in which these are embedded. Zehetmeier (2010) added levels like *knowledge, beliefs* and *practice* of not only teachers involved in the TPD, but also students, colleagues and staff members. Instead of focusing on the group or system level (Seufert & Euler, 2004; Anderson & Stiegelbauer, 1994) the focus in this paper is on participating teachers and changes in their classroom practice.

The term *sustainability* is increasingly used in the field of TPD (Zehetmeier, 2010). Hargreaves and Fink (2004) defined sustainability as a TPD programme '*aiming to develop the individual teacher's skills, which will last long after the TPD programme has ended*'. As we believe that not only developing a teacher's skills leads to sustainable change in classroom practice, but also changing a teacher's beliefs and motivation to change classroom practice do so, we choose to work with Hargreaves and Fink's (2004) definition, expanded with the need for a teacher's actual behavioural change. This resulted in the following definition of sustainability: *aiming to develop the individual teachers' skills or/and change teacher dispositions and behaviour in classroom practice, which will last long after the TPD programme has ended*.

## 2.2 Factors influencing the sustainability of a TPD programme

Tirosh (2015) pointed out three main elements to consider when planning professional development programmes: the *aims* (e.g., introducing a new curriculum, increasing knowledge, changing beliefs), the *content* (e.g., subject-content knowledge, pedagogical-content knowledge, learning theories) and the *process* by which the development will be delivered (e.g. focus on individual teacher-researcher collaboration, teams, various schools). Next to that we need to ask ourselves which aspects of a programme influence a teacher the most and are most likely to bring about a change in teacher behaviour and student achievements. Once a TPD programme has resulted in significantly improved student achievements, how then can we make sure that the elements causing these changes sustain over a longer period in time and become embedded in the teacher's day-

to-day practice? And even more important: Are we able to determine which elements of a TPD programme cause sustainable changes in teacher behaviour and which elements cause teachers to ignore new ideas?

Timperley et al. (2007) provided an overview of effective contexts for promoting teacher professional development that influence student outcome. They consider seven contexts to play an important role in the sustainable success of a teacher professional development project:

- 1) extended time for learning opportunities;
- 2) external expertise;
- 3) teacher's engagement;
- 4) challenging prevailing discourses;
- 5) participation in a professional community of practice;
- 6) consistency with wider trends in policy and research; and
- 7) active school leadership.

Each context will be described in more detail in the next section, where we discuss the contexts of our TPD interventions.

On Hattie's ranking list of effect sizes of interventions in teaching practices (Hattie, 2015) *teacher estimates of achievement* and *collective teacher-efficacy* were number 1 and 2 respectively. Collective teacher efficacy starts with individual teacher self-efficacy. Building on a teacher's subject-content and pedagogical-content knowledge remain important factors influencing sustainable teacher change in classroom practice (Tirosh, 2015) and student achievement. Jaworski and Huang (2014) point out that teachers need to feel that their needs, and not only some system's needs, are met by being involved in a TPD programme; also, teachers who feel more involved will be more inclined to participate and put new ideas to the test.

Selter and colleagues (Selter, Gräsel, Reinold and Trempler, 2015) were surprised to find that in their research, participating in a professional community of practice (Timperley et al., 2007) turned out not to have an important impact on the sustainability of various TPD programmes. The impact of programme-content knowledge, however, seemed to play a more important role in influencing teachers' self-efficacy, attitude and classroom practice.

Several studies pointed out that some factors negatively affect the sustainability of a TPD programme and hinder new ideas to spread amongst a professional community (scaling-up). An example of this is a lack of support from the individual teacher's school environment (e.g. fellow teachers, staff members, school leaders). Although a teacher might change his (or her) classroom practice and embed a TPD programme's elements in his teaching, he might not be able to bring about broader change when he is not able to convince fellow teachers or is not supported by staff members when in need of time to spend on implementing new ideas. Loucks–Horsley and colleagues (Loucks–Horsley, Stiles, & Hewson, 1996) already pointed out that, if there is no further support for teachers who are willing to change classroom practice, many of them will not continue to develop new teaching ideas any further. They revert to their former teaching practice, ultimately resulting in change that is not sustained.

## 2.3 Context of the TPD programme examined in this research

In order to detect what causes teachers to change their teaching behaviour sustainably, the effect of a newly designed and tested teaching tool and pedagogy for English teachers in the Netherlands was investigated. As teaching English pronunciation in EFL (English as a foreign language) lessons in the Netherlands is being neglected (Hermans & Sloep, 2015), and there is no specific pedagogy for teaching English pronunciation taught at teacher training colleges, many students, regardless of their level of education, end up speaking English with a lot of phonological interference (i.e. speaking English but replacing English vowels and consonants with Dutch vowels and consonants). This affects the intelligibility and the credibility of the speaker (Hermans & Sloep, 2015; Lev-Ari & Keysar, 2010). The teaching tool aimed to improve the students' English pronunciation skills and offered the teachers a pedagogy for teaching important aspects of English pronunciation to their students. The pre- and post-tests (before and after working with a computer-assisted pronunciation teaching tool, or CAPTT) showed significant improvement in student achievement in five of the six error type categories dealt with in the CAPTT (Hermans & Sloep, 2018). Working with the CAPPT also showed significant change in initial teacher behaviour, motivation and attitude (Hermans, et al., 2017).

For this TPD programme we first aimed to provide effective conditions for promoting TPD that influences student outcome according to the aforementioned seven contexts (Timperley et al., 2007).

1. *Extended time for learning opportunities:* The TPD programme and the implementation of the new pedagogy for teaching English pronunciation to Dutch learners of English was spread over two years. Teachers were able to test the teaching tool in the first year and suggest changes to the programme to improve and adapt the teaching tool after working with it for a year, in order to adjust the programme to their classroom practice situation.
2. *External expertise:* A computer-assisted pronunciation teaching tool offered a teacher guide and teacher background information part on basic phonetics and articulation activities. It also offered a structured pedagogy for teaching English pronunciation and various testing materials for teachers to use in order to measure the students' progress. These test results were not part of the research data.
3. *Teacher's engagement:* In the first stage, participation was on a voluntary basis (invitations by mail and presentations). In a later stage a school adopted the CAPTT and made it part of its curriculum. In the first stage not all the teachers were equally motivated, but all of them took part because they considered English pronunciation to be an important aspect to teach, but they recognised the lack of a solid approach to teach English pronunciation.
4. *Challenging prevailing discourses:* The discussion on the importance of teaching English pronunciation was the starting point of multiple presentations by the stakeholder (teacher training college). The discussion on pronunciation, touching upon issues like the absence of pronunciation teaching in the Netherlands and the effect of a good English pronunciation on the credibility of the speaker (Hermans & Sloep, 2015; Lev-Ari & Keysar, 2010) caused teachers to volunteer to test the CAPTT in their classroom practice.
5. *Participation in a professional community of practice:* The CAPTT (module in the format of a website) offered the opportunity for teachers to express their opinion and share their experiences using the CAPPT in an online forum (chat box). Teachers were constantly motivated to share their teaching experience online.
6. *Consistency with wider trends in policy and research:* In the Netherlands various articles are being published on the overestimation of the Dutchman's English speaking and pronunciation skills (Zijlmans, 2010; Krooshof & Adringa, 2011; Van Hattum & Rupp, 2014) The European Union researched the English

pronunciation skills of non-native speakers of English in 2006 and found that the Dutch overestimate their English speaking and pronunciation skills. In other European countries 20% to 30% of the participants stated that they could easily communicate successfully in English. For the Dutch 80% to 90% claimed to be able to successfully communicate in English. The same research shows that 25% of Dutch businesses disadvantage themselves because of poor pronunciation skills in business negotiations. The English department of the principal investigator's teacher training college in the Netherlands, noticed the pronunciation difficulties of first year students, that sometimes blurred the intelligibility of the speaker, or caused the English pronunciation of the speaker to sound too Dutch, effecting the credibility of the speaker. After initial research (Hermans & Sloep, 2015) an error type category was considered to deserve more and specific attention in secondary education if 50 % of the subject group makes mistakes in more than 50 % of the possible mistakes to be made in a test in this category. The results show that six error categories met this requirement. The CAPTT was designed on the basis of this data.

7. *Active school leadership:* Heads of schools and English departments were asked to play a role in the organisation of the spreading of questionnaires (and also the legal part of it when students were involved) and to allow teachers to try out the CAPTT in a classroom situation. The management was not involved in the design or choice of TPD-topic.

We studied the lasting effects of the pedagogy used in the CAPTT a year after the TPD programme had ended. There had been no more follow up activities in that year. Not the usage of the teaching tool (the CAPTT) was the focus of this research, but the embedded pedagogy for teaching pronunciation and the time devoted to teaching English pronunciation (which was no time at all before teachers started using the CAPTT). We were specifically interested in what caused teachers to either change their teaching behaviour or reject new approaches offered by our TPD programme. We were also interested in finding out in which contexts effective teacher learning could be detected. We expected that enhanced subject-content knowledge and pedagogical-content knowledge (Tirosh, Tsamir, & Levinson, 2015) would cause teachers to become more willing (efficacy; Hattie, 2015) to implement new ideas into their classroom practice and to embed them in their future teaching activities.

3. Method

3.1 Participants

In 2013 students of various schools (secondary, intermediate and higher vocational schools) took part in an English-speaking test which focused primarily on the students' English pronunciation skills. Based on the results a computer assisted pronunciation-teaching tool (CAPTT) was designed (Hermans & Sloep, 2018) with the aim to improve students' English pronunciation skills in six error type categories. English teachers of several secondary schools, a school for intermediate vocational education and a university of applied sciences were invited to test the CAPTT in their English lessons in the academic years 2013-2014 and 2014-2015. Of the nineteen teachers involved in the TPD programme in 2013-2014 and 2014-2015, ten teachers were able to meet the principal investigator (PI) for a follow-up interview a year after the programme had ended (2016). The other teachers were either relocated, left the school for other purposes or did not respond to any of the PI's mails. Of the ten participating teachers four taught third-year bachelor students at a university of applied sciences and six taught at secondary schools in the Netherlands (spread over four different schools in the south of the Netherlands). The secondary school teachers all worked at similar schools with similar teaching conditions. The teachers teaching bachelor students worked at the same school (Hermans et al., 2017). To protect the teachers' privacy their names are fictional.

Table 1: details subject group teachers

Teacher	Age	Degree	experience in years	School type	L1 background
Lukas	30	Master	8	Higher voc. ed.	Dutch
Andrew	28	Master	8	Higher voc. ed.	Dutch/Moroccan
Sergio	35	Bachelor	2	Higher voc. ed.	Dutch
Sanna	36	Bachelor	7	Higher voc. ed.	Irish
Jacky	40	Bachelor	14	Secondary education	British
Simon	53	Master	6	Secondary education	Dutch
DeeJay	51	bachelor (studying for master)	21	Secondary education	Dutch/ Moroccan
Katrien	35	Bachelor	13	Secondary education	Dutch
Danny	32	Bachelor	8	Secondary education	Dutch
Ella	27	Master	3	Secondary education	Dutch

As the objective was to measure the sustainability of our TPD programme and compare data of teachers who participated in the TPD-programme with data of teachers who did not participate, we randomly asked six teachers who did not participate to follow some of the same procedures (described later on) in our research. Table 2 provides the details of those non-participants.

Table 2: details control group teachers

Teacher	Age	Degree	experience in years	School type	I1 background
Audy	30	Bachelor	7	Secondary education	Dutch
Stef	47	Bachelor	22	Secondary education	Dutch
Emil	30	Bachelor	6	Secondary education	Dutch
Jadee	57	Bachelor	32	Secondary education	Dutch
Remona	32	Bachelor	8	Secondary education	Dutch
Janine	25	Bachelor	3	Secondary education	Dutch

Table 3 provides details of the teachers’ students who were asked to anonymously fill in a 4-point scale questionnaire on the *Perceived Teacher’s Effort for Teaching English Pronunciation*.

Table 3: details students of subject group teachers and control group teachers

Teacher	number of students	level	age group	School type	teacher participated
Lukas	19	3rd year bachelor	20-22	Higher voc. ed.	yes
Andrew	9	3rd year bachelor	20-22	Higher voc. ed.	yes
Sergio	4	3rd year bachelor	20-22	Higher voc. ed.	yes
Sanna	12	3rd year bachelor	20-22	Higher voc. ed.	yes
Jacky	19	2 vwo	13-14	Secondary education	yes
Simon	19	5 vwo	16-17	Secondary education	yes
DeeJay	19	5 havo	16-17	Secondary education	yes
Katrien	21	3 havo	14-15	Secondary education	yes
Danny	20	2 vwo	13-14	Secondary education	yes
Ella	21	4 vwo	15-16	Secondary education	yes
Audy	21	2 havo	13-14	Secondary education	no
Stef	19	3 havo	14-15	Secondary education	no
Emil	18	2 havo	13-14	Secondary education	no
Jadee	20	3 havo	14-15	Secondary education	no

Remona	15	2 vwo	13-14	Secondary education	no
Janine	21	3 havo	14-15	Secondary education	no

All students of the participating teachers responded. This response rate of 100% was achieved by presenting the questionnaires (see 3.2.1) in class to the students.

3.2 Procedure

A year after the TPD programme had ended we revisited the teachers who participated in the programme and visited six teachers who did not participate. The teachers were asked to fill in a 4-point scale questionnaire, which was designed in order to investigate which aspects of pronunciation teaching were still present in the pedagogy of the teachers who took part in the TPD programme, using the CAPTT in their actual classroom practice. Next to a teacher’s paper version of questionnaire a student version, covering the same topics, was issued. For the students an online version was designed (Google Forms) so that they could fill in the questionnaire in class, using their laptops or mobile phones. School management organised set dates and times for students to fill in the questionnaire during teaching hours.

The participating teachers were asked to fill in a second questionnaire that was designed to measure teachers’ motivation to use the pedagogy of the TPD programme. After filling in the two questionnaires the teachers who took part in the TPD programme were invited for a semi-structured interview in order to investigate either what motivated them to change their classroom practice and adopt features of the TPD programme, or what caused them to ignore the new teaching ideas dealt with in the CAPTT. A topic-centred approach was taken for the interviews. So rather than a complete and sequenced script of questions, a number of topics within a flexible structure were prepared which would allow the researcher and the interviewee to touch upon a number of areas, but also to develop unplanned themes where necessary. The interviews were all audio-taped and transcribed.



### 3.3 Instruments

#### *Perceived Teacher's Effort for Teaching English Pronunciation.*

**Teacher's Effort for Teaching English Pronunciation.** To assess the degree to which teachers believe they are facilitating and using pedagogy for learning English pronunciation a second measure was developed (Appendix F: questions teachers). Actually, this measure is the counterpart of the PTETEP measure and is referred her as TETEP. TETEP, therefore, also contained 30 items that assessed the trait 'facilitating and using pedagogy for learning English pronunciation.' All items used a 4-point Likert rating scale (1 = never, 2 = sometimes, 3 = regularly, 4 = often) for obtaining an item score.

**Semi-structured interview.** In order to measure either what motivated participating teachers to change their classroom practice and adopt features of the TPD programme, or what caused them to ignore the new teaching ideas dealt with in the CAPTT a semi-structured interview was conducted.

**Perceived Locus of Causality.** In order to measure teachers' motivation to use the pedagogy of the TPD programme we used a measure that was derived from the Perceived Locus of Causality measure (PLOC) of Ryan and Connel (1989); we refer to this as the adapted PLOC measure or for short a-PLOC. This measure assesses different types of motivation that regulate behaviour as defined by the Self-Determination Theory (SDT) of Ryan and Deci (2000). In short, SDT distinguishes between intrinsic and extrinsic motivation. Intrinsic motivation is concerned with the enjoyment and challenges the engagement with an activity or object (i.e. CAPTT) gives. A-PLOC measure assesses each type of motivation to use the pedagogy of the TPD programme. Thereby, intrinsic motivation has two dimensions, namely affect and potency. Whereas affect refers to the fun and enjoyment, potency refers to the challenging and stimulating aspects of the engagement. Items of a-PLOC were all rated using a 7-point Likert scale with endpoints 'always false' (1) and 'always true' (7). The same measure was already used in our previous studies (Hermans et. al., 2017).

**Intention.** We also measured teachers' intention to teach English pronunciation according to the pedagogy used in the TPD module. Behavioural intention is defined as "an indication of a person's readiness to perform a behaviour" (Fishbein & Ajzen, 2010,

p. 39). Intentions is seen as a proxy for actual behaviour; that is, actually teaching in line with the ideas of the TPD programme. However, it should be noted that the relationship is not perfect. The instrument to measure behavioural intention is constructed according to the guidelines given by Fishbein and Ajzen (2010). Items of intention measure were all rated using a 7-point Likert scale with endpoints 'always false' (1) and 'always true' (7).

### 3.4 Analysis

The first part of the analyses pertained to the construct validation of the PTETEP and the TETEP. However, the latter measure TETEP could not be validated due to the low number of teachers who used it. As a result, TETEP will only be used at the item level. The second part of the analyses pertained to finding differences in perceptions between participating and non-participating students and in beliefs between participating and non-participating teachers regarding the facilitation and usage of a pedagogy focused on English pronunciation. The third part pertained to whether there is a difference of what students perceived and what teachers believed regarding the facilitation and usage of a pedagogy focused on English pronunciation. The fourth part analyses the motivation and intentions of teachers regarding the use of English pronunciation pedagogy.

**Part 1:** Validation of the PTETEP scale. The Rasch Measurement Model (Rasch, 1960; Wright & Masters, 1982) was used for scale validation and for determining the item and person measures (i.e., scores). The latter represent the more 'true' scores in contrast to total scores that are used still by many researchers (Tennant & Conaghan, 2007). Total scores are the summation of the items scores of a measure but all these scores are flawed because Likert scales are ordinal rather than interval scales; therefore, total scores may not be assumed to be linear (Bond & Fox, 2015; Boone, Staver, & Yale, 2014). It should be noted that item and person measures are denoted in logits that can be either negative or positive; measures are 'better' when going from the most negative measure to the most positive measure (Boone et al., 2014, Chapter 4). Winsteps version 3.90 was used as analyzing tool as it implements the Rasch Measurement Model (Linacre, 2016).

Conducting the Rasch analyses is an iterative process requiring several steps. The first step was explorative in order to identify items and persons (i.e., the students) that obviously

would misfit the Rasch Measurement Model. An item misfit means that the index Outfit Mean Square (MNSQ) is below the value of .5 or above the value of 1.5 (Linacre & Wright 1994). Whereas a person misfit follows the same criterion as an item misfit, it was decided to follow a more relaxing index which is the Outfit Z-standardized (ZSTD), whose absolute value must not exceed the value of 3.0 not to be a misfit (Boone et al., 2014, p. 173). In this explorative first step, Q3, Q5 and Q6 were identified as items that exceeded the Outfit MNSQ threshold value of 1.5 by far; therefore, they were excluded from further analyses. There were also misfit persons detected but they were not yet removed because we wished to 'repair' them. The explorative analyses also considered a) whether the observed ordering of the answer categories for each item matched the theoretical ordering (i.e., 1 = never, 2 = sometimes, 3 = regularly, 4 = often) and b) whether the items used all answer categories (Boone et al., 2014, Chapter 9). The analyses revealed a) that item Q12 had the observed ordering deviating from the theoretical ordering, which led to its exclusion from further analyses and b) that all remaining items used all answer categories, which means that no answer category was superfluous.

The second step involved the further determination of other misfit items and persons — the removal of Q3, Q5, Q6 and Q12 re-shifted item and person measures. Regarding the misfit persons, it was first checked whether such persons could be 'repaired' such that they would fit the Rasch Measure Model. Repairing means that unexpected responses on some items would be marked as missing. Unexpected responses were identified by inspecting the Z-residuals of each person response on an item ((Boone et al., 2014, p. 177). A total of 11 persons were 'repaired' by changing only one unexpected response of them into a missing response. However, not all persons could be repaired. Reruns of Winsteps revealed 12 misfit persons. These 12 persons were, therefore, excluded for further analyses. These 12 persons represent 4.3% of the total sample of 277 persons, which is acceptable as it is less than 5% (Boone et al., 2014, p 176). The reruns also revealed item Q30 now to be a misfit in the new configuration of the measure (every rerun caused a re-shifting of item and person measures).

The third step investigated whether items function differently for participants and non-participants — this phenomenon is referred to as 'different item functioning' (DIF). Five items Q8, Q13, Q14, Q26, and Q29 were found to exhibit DIF; that is, a statistically significant p value ( $p < .05$ , two-tailed) was found and the DIF contrast was above .64 (Linacre, 2016, p. 422). Given the DIF contrast values (respectively .66, 1.51, -.67, .77, -.73) it was decided to remove Q13 for further analyses as the DIF contrast was

high. A rerun of Winsteps without Q13 (and without the earlier removed items Q3, Q5, Q6, Q12, and Q30) revealed now three items Q8, Q26, and Q29 to exhibit DIF (DIF contrast values were respectively .71, .82, and -.71). In order to keep these three items, further analyses were conducted by separating the Rasch analyses for participants from the non-participants but by anchoring the item measures for the items not exhibiting DIF and by anchoring the Rasch-Andrich thresholds of the answering categories (see for this procedure Boone, Staver, & Yale, 2014, Chapter 13). The resulting Wright-maps (Boone et al., 2014, Chapter 6) are depicted in Figure 1. This figure also depicts the mean person measure values for participants and non-participants.

**Part 2: Differences between participants and non-participants.**

**Student perceptions.** SPSS version 24 was used for conducting an independent t-test to determine whether there is a significant difference in perception between participants and non-participants. Person measures were used rather than total scores. SPSS was also used for descriptive statistics (e.g., means, standard deviation). Finally, the effect size (Eta squared) of the difference was calculated (Pallant, 2010, p. 243).

**Teacher beliefs.** A non-parametric Mann-Whitney U-test was used to determine whether there is a significant difference between the beliefs of the participating and non-participating teachers about their facilitation and usage of aspects of the pedagogy present in the TPD programme.

**Part 3: Differences between student perceptions and teacher beliefs.**

In the first stage one researcher analysed the transcriptions. An analysis (Patton, 2002) was performed identifying interview fragments on the basis of categories derived from the research questions as sensitizing concepts (Strauss, 1987; Strauss & Corbin, 2008). The questions in the interviews focused on various aspects of teaching pronunciation and working according to the pedagogy taught in the TPD programme. After transcribing the recordings of the interviews, quotes were categorised. We were interested in noticeable aspects of pronunciation teaching that were part of the TPD programme and which were now still detectable in the teaching practice of the teachers today. This category provides information on the sustainable aspects of the TPD programme and was coded under *Sustainability*. Furthermore, we were interested in the enhanced self-efficacy beliefs of teachers who took part in the TPD programme. This was coded under *Self-efficacy*. Next to that we focussed on signs of changes in awareness in respect of the importance of teaching pronunciation and this was coded under *Awareness*.

Additionally, we concentrated on aspects dealing with the intention to take up aspects of the TPD programme in lessons or even more broadly, in curricula in the future. This was coded *Intention*. Signs of a changing attitude or behaviour towards the teaching topic of the TPD programme were of interest to us too and these were coded under *Attitude/behaviour*. Finally, we were also interested in aspects that had a demotivating effect on using the pedagogy of the TPD programme, causing teachers to ignore and neglect teaching English pronunciation in line with the pedagogy presented in the TPD programme. This was coded under *Demotivation*.

Part 4: Motivation & Intention

Items of a-PLOC were all rated using a 7-point Likert scale with endpoints ‘always false’ (1) and ‘always true’ (7). We measured behavioural intention by constructing an instrument according to the guidelines given by (Fishbein and Ajzen, 2010). Items of intention measure were all rated using a 7-point Likert scale with endpoints ‘always false’ (1) and ‘always true’ (7) To investigate the relationships between the different types of motivation and the behavioural intention, Spearman correlations were calculated. We calculated the mean and standard deviation of each item and the Cronbach’s alpha of each scale.

4. Results

4.1 PTETEP

Figure 1 shows that overall the (remaining) items of the raw measure were difficult to be endorsed by both participators and non-participators as the mean of the item measures is about 1 logit higher than the mean of the person measures for participators and roughly 2 logits higher than the mean of the person measures for non-participators. Preferably, the means should be at the same level and ideally the mean of the item measures should be 1 logit lower than the mean of the person measures. In terms of quality of the PTETEP measure it means that the measure is excellent in measuring students who have high perceptions of teachers facilitating and using pedagogy for learning English pronunciation but is somewhat problematic in correctly measuring student who have low perceptions. Nevertheless, item and person separation indices were good (Boone et al., 2014, p. 231). For the participators, the item separation index was 7.32 and the person separation index

was 3.88 (Cronbach’s alpha .96). For the non-participators, the item separation index was 4.61 and the person separation index was 2.81 (Cronbach’s alpha .92). Future versions of the PTETEP measure should include items that are able to assess students with low perception of teachers facilitating and using pedagogy for learning English pronunciation. Practically, it means that these items should signal even the slightest effort of a teacher when practicing English pronunciation.

Figure 1

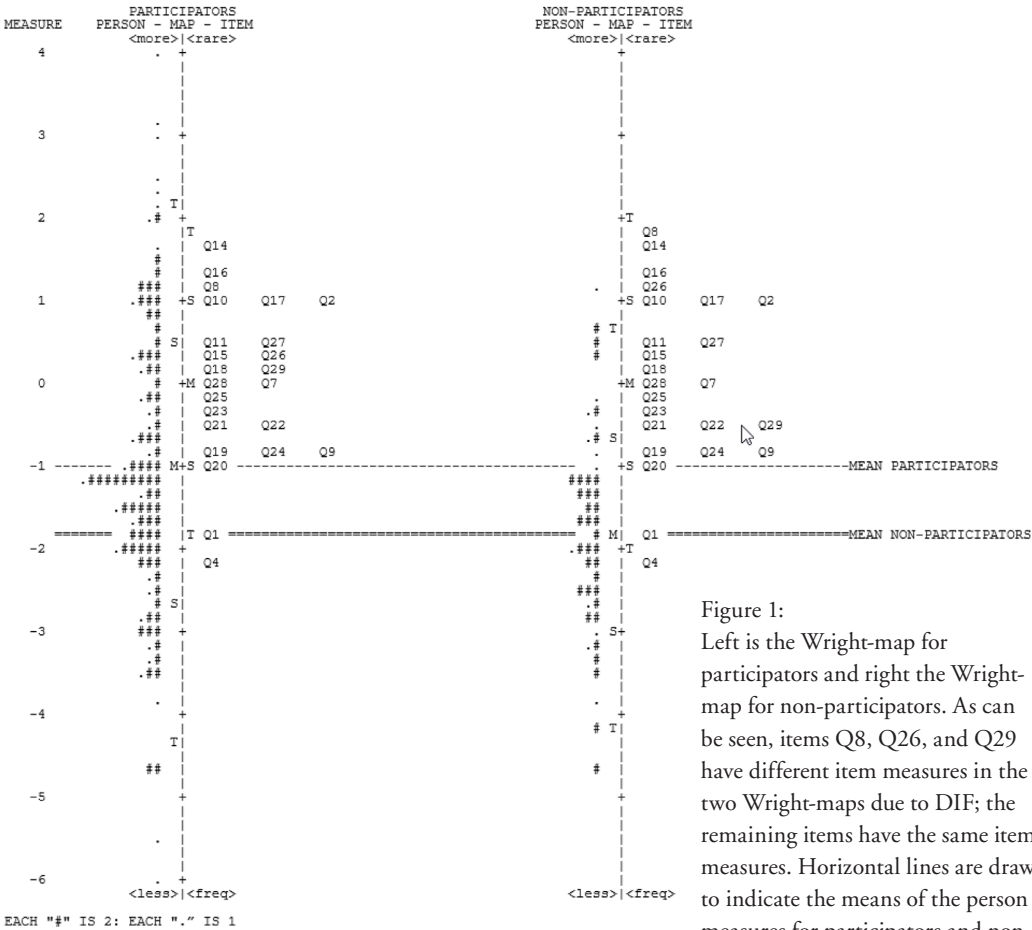


Figure 1:  
Left is the Wright-map for participators and right the Wright-map for non-participators. As can be seen, items Q8, Q26, and Q29 have different item measures in the two Wright-maps due to DIF; the remaining items have the same item measures. Horizontal lines are drawn to indicate the means of the person measures for participators and non-participators respectively.

Differences between participators and non-participators

**Students.** The findings of the independent t-test revealed that the difference in means in person measures for student participators (M = -1.06, SD = 1.74) and non-participators (M = -1.80, SD = 1.22) was significant ( $t(215.37) = -3.98, p < .001$ , two-tailed), equal variances not assumed. The magnitude of the difference in the means of the person measures (means difference = -.74, 95% CI: -1.11 to -.37) was moderate (Eta squared = .06) (see Cohen, West, & Aiken, 1988).

**Teachers.** The Mann-Whitney U test showed that participating teachers and non-participating teachers overall did not significantly differ in their own beliefs of facilitating and using aspects of the pedagogy also present in the TPD programme. Only four items showed a significant difference: items 21/22/23 and 26 were more present in the teaching of participating teachers, with 26 already being indicated as a DIF item.

Differences between student perceptions and teacher beliefs

Table 4 shows examples of quotes from teacher and how they were categorised under the various sensitising concepts.

Table 4: Teachers’ quotes from semi-structured interview, categorised under various sensitising concepts

categories as sensitising concepts based on research questions	examples of quotes (and teacher)
Sustainability	I talk a lot about linking r now. (Andrew) I sometimes use websites to teach pronunciation. (Andrew) I still use the TPD- module (website), even in other lessons. (Danny) My teaching of pronunciation is more structured and less ad hoc now. (Danny) A pay more attention to the six aspects of the TPD programme now. (Simon) Once in a while I use aspects of the TPD module in my lessons (Ella) I focus on the TH in my lessons. (Ella) For me the six error types of the module became a guideline for teaching pronunciation. (Simon) I focus more on the six error type categories (Simon) Now I have students recording themselves so they can analyse their own performance. (Simon)

	I dealt with most error types in class already, but I added aspiration to it because of the module (Jacky) Now I stop students when they are speaking English in order to correct their pronunciation. I never did that before. (Deejay) The module became part of our curriculum. (Sergio) I sometimes wonder why I still use the module because now I deal with the error types in my lessons anyway. (Sergio)
Self-efficacy	I feel more competent to teach pronunciation and I do it more often. (Danny) I can better hear the mistakes they make (Ella) I am better in teaching pronunciation now. (Ella) I am happy I took part in the TPD as I became more aware of how to deal with the mistakes I hear. (Simon) Taking part was very useful as it gave me a structure and I feel more capable to teach pronunciation. (Deejay) The module completed a part of what I was missing.... a pedagogy for teaching pronunciation. (Deejay) I now hear mistakes which I know how to correct (Simone) I can isolate mistakes better now. (Sergio) I feel more competent to teach pronunciation and I also improved my own pronunciation (Sergio)
Awareness	For a teacher this is very useful as you become more aware of the pitfalls for Dutch students of English. (Danny) I realised I neglected teaching pronunciation in my lessons (Ella) I noticed that students were struggling with their pronunciation but I did nothing to help them. This module made me realise that it is important to help them. I need to pay more attention to it. (Ella) Pronunciation teaching became a reoccurring item on our agenda during meetings (Simon) Better pronunciation influences the credibility of the speaker (Simon) We discuss pronunciation in our meetings now. (Katrien) With the module became more awareness for the topic of pronunciation teaching. (Sergio)
Intention	Teaching pronunciation is taken up in our planning. (Danny) I am going to use the module before students get their presentation tasks. (Ella) We are looking for new course books with sections on pronunciation too. (Simon) I am planning to look for useful ICT materials on pronunciation for my students but I haven't got round to it yet. (Jacky) We are trying to incorporate teaching pronunciation in the first three years of our (secondary) school curriculum. (Simon) We still depend too much on out course books and should think more out of the box when it comes down to teaching pronunciation....I am hoping for a change (Katrien) I still have to embed more of pronunciation teaching in my lessons (Sergio)

Attitude/behaviour	I point out websites on pronunciation to my students now. (Ella)
	I collected websites on pronunciation for students to use. (DeeJay)
	I started pointing out interesting websites, videos and apps covering aspects of English pronunciation to my students in order to help them practise. (Sergio)
Demotivation	I never discuss teaching pronunciation with my colleagues as they seem not to be interested in it. (Ella)
	When getting students to speak English and record themselves in the upper classes, we detect peer pressure. (Jacky)
	Students feel ashamed when we really focus on their individual pronunciation skills...they are not used to this kind of feedback. (Simon)
	Teaching the six error types using the module takes up too much time (7 lessons) and in that way it does not fit in the already tight schedule for my students. (Jacky)
	Teaching pronunciation is done ad hoc because of the lack of time to really focus on it.
	I never discuss teaching pronunciation with my colleagues as they have other priorities when it comes down to teaching English (Jacky)
	Because of a lack of time I am not able to use the module. (Katrien)

Table 5 summarises the teachers’ perception of what they still use of the TPD programme in their day-to-day classroom practice.

Table 5: Teachers’ perception of teaching TPD aspects (n =10)

teaching TPD aspects	number of teachers
teaching all aspects of the TPD programme by using the CAPTT	2
teaching all aspects of the TPD programme without using the CAPTT	1
teaching most aspects of the TPD programme without using the CAPTT	4
teaching some aspects of the TPD programme without using the CAPTT	2
no response	1

4.2 Motivation

The results of the administration of the a-PLOC measures are shown in Table 6. As can be seen, Cronbach’s alphas were all satisfactory.

Table 6: A-PLOC measure

nr					
item	Item	M	SDM	SD	
intrinsic – affective; Cronbach’s alpha = .95					
1	is fun	4.67	1.44	4,55	1,75
2	is pleasant	4.92	1.24	4,45	1,70
3	is exciting	4.08	1.56	4,00	1,90
4	is fascinating	4.08	1.51	4,73	1,62
5	is enjoyable	4.75	1.22	4,64	1,69
intrinsic - potency; Cronbach’s alpha = .76					
1	is interesting	5,58	1,00	5,64	1,03
2	is challenging	4,67	1,61	4,91	1,81
3	is energizing	4,00	1,04	4,09	1,70
4	is absorbing	4,67	1,07	4,73	1,35
5	is stimulating	4,75	1,29	4,82	1,60
integrated; Cronbach’s alpha = .95					
1	suits my preferred way to learn new skills	4,67	1,30	5,09	8,31
2	is compatible with how I usually want to improve my skills	4,50	1,51	4,73	0,91
3	fits my teaching style	5,00	1,21	5,36	0,67
4	fits my beliefs about how students learn	5,00	1,48	5,09	0,94
identified; Cronbach’s alpha = .85		.85			
1	is useful to me	5,58	1,38	5,64	0,92
2	is meaningful to me	5,36	1,43	5,64	0,92
3	makes me confident	4,75	1,49	5,18	0,98
4	is productive to me	5,00	1,28	4,91	0,94
5					
6	will help me	5,00	1,28	5,09	1,45
introjected; Cronbach’s alpha = .93					
1	I want others (e.g., my colleagues, my students) to think I am a smart person	2,08	1,62	1,09	0,30
2	I want others (e.g. my colleagues, my students) to be satisfied with me	3,50	2,51	2,27	1,74
3	I want to give the impression that I am doing the sensible thing	2,83	1,75	2,18	1,66
4	otherwise I would feel ashamed of myself	1,75	1,36	1,36	0,67

5	otherwise I would feel guilty of not doing so	1,92	1,73	1,45	0,82
6	otherwise I would feel bad about myself	2,00	1,95	1,36	0,67

extrinsic; Cronbach's alpha = .78		1			
	will give me credits for my professional development targets	3,75	1,91	3,27	2,33
2	will cause me not to look bad in my professional environment	3,42	1,98	3,09	2,39
3	will cause some people not to become angry with me	1,92	1,51	1,64	1,21
4	will avoid poor future perspectives	2,67	1,61	2,27	2,06

amotivation; Cronbach's alpha = .88		1			
	but I really have no desire to do so	1,92	1,62	1,91	1,22
2	although I think it is a waste of time	1,50	1,00	1,64	0,81
3	but personally I give no priority to that	2,33	1,56	2,45	1,75
4	although I would prefer to do other things	2,58	1,83	2,00	1,10
5	but actually I don't see the point of it	1,75	1,49	1,27	0,47
6	but in fact I have no energy for it	1,75	1,06	1,18	0,41

4.3 Intention

The results of the administration of the Behavioural intention measures are represented in Table 7. The Cronbach's alpha was very satisfactory.

Table 7: Behavioural intention measure

nr			
item	item	M	SD
intention - willingness; Cronbach's alpha = .94			
1	I intend to use DYSSE in my teaching in the future	5,83	1,34
2	I am pretty sure I'm going to use DYSSE in my teaching	5,92	1,44
3	I think I'm going to use DYSSE in my teaching	5,67	1,67
4	I am willing to use DYSSE in my teaching	6,17	1,19
5	I'm definitely going to apply DYSSE in my teaching	5,58	1,68
7-point Likert scale; 1='always false'... 7='always true'			

To investigate the relationships between the different types of motivation and the

behavioural intention, Spearman correlations were calculated. The results are shown in Table 8.

Table 8: Spearman correlations

	1	2	3	4	5	6	7	8
1. willingness	1							
2. intrinsic – affect	.385	1						
3. intrinsic – potency	.600**	.844**	1					
4. integrated	.869**	.716**	.832**	1				
5. identified	.916**	.489	.787**	.873**	1			
6. introjected	.086	.338	.250	.153	.210	1		
7. extrinsic	.714**	.616*	.887**	.789**	.874**	.092	1	
8. amotivation	.250	.074	.107	-.084	-.303	.415	-.043	1

\* (2-tailed)

\*\* (2-tailed)

5. Discussion

5.1 Perceived Teacher's Effort for Teaching English Pronunciation

The t-test tells us that there is a significant difference in the perceptions of the students taught by the participating teachers compared to the students that were taught by non-participating teachers. However, it is not clear what caused this difference. Figure 1 shows no items between the two lines that represent the means of person measures for participators and non-participators. If this had been the case, then these items would be indicating the cause of the difference. The overall impression is that students of both groups find it hard to perceive most of the elements in the questions in their classroom practice. The students taught by the participating teachers, however, more often gave high scores to some of the items which were initially considered to be difficult by the PI. The test turned out to be more suitable for measuring the outcome of the high perceivers than low perceivers. The effect-size of 0.6 is moderate, indicating that the students taught by the participating teachers benefitted from the treatment.



## 5.2 Teachers' beliefs of facilitating and using aspects of the TPD programme

The Mann-Whitney U-test indicated there was no significant difference between the beliefs of the participating and non-participating teachers about facilitating and using aspects of the pedagogy also present in the TPD programme. Teachers who were not involved in the TPD programme still claimed to teach the aspects of the TPD programme and even use its pedagogical aspects. However, the students of the non-participating teachers did not perceive these aspects in the classroom practice. The students of the participating teachers were more aware of the aspects being dealt with in class.

## 5.3 Interviews

With nine teachers still using aspects of the programme a year after the TPD activities has ended, some of the TPD programme's sustainable effects on teacher behaviour are evident. Most of the teachers, however, seem to have embedded various aspects of the TPD programme in their teaching, but refrained from using the CAPPT in their classroom situation. One teacher states that although she is not using the CAPPT anymore, the six error types have become her guide to pronunciation teaching. One teacher uses most of the aspects of the CAPPT, but has added an additional error type (intonation). Three teachers also mention that they are using the didactics of the CAPPT in their classroom now (recording students, interrupting students to correct pronunciation). One teacher indicates that he is asking himself why he should keep on using the CAPPT in the future as he dealt with all of the aspects in class anyway. As the initial aim was to stimulate teachers to teach English pronunciation in class, provide a pedagogy to enable teachers to teach pronunciation and make it a sustainable aspect of their teaching practice, not using the CAPPT is not considered a failure of the TPD programme. After all, the initial goals are met by teachers embedding the pedagogy that is behind the CAPPT in their day-to-day classroom practice.

## 5.4 Motivation and Intention

The a-PLOC measures for motivation (Table 6) and behavioural intention (Table 7) all showed a satisfactory Cronbach's alpha. This, combined with the measured relationships between the different types of motivation and the behavioural intention, (Spearman correlations) indicates that, apparently, teachers intend to teach English pronunciation according to the pedagogy they learned during their TPD training, because they find it interesting and challenging to use (potency). They also believe its use is connected with their identity as being a teachers (integrated) as well as that they find the CAPPT a useful tool. However, there is also an external force that pressures them to use the new pedagogy (extrinsic).

## 5.5. Further discussion

Considering the fact that the CAPPT was developed to be as time- and cost-efficient for schools, teachers and students involved as possible, it is remarkable to find that most teachers opt not to use the CAPPT if not pressed by researchers to do so. When asked in interviews why the CAPPT was not used anymore, the main reason given was lack of time. Even finding a computer room or making sure the Internet is available is too time-consuming. Next to that teachers claim that it is even more time-efficient to deal with the error types as they present themselves in class while students are speaking English, than running the full programme. Some teachers also mention that they do not want to put their students on the spot while recording their performances. As students are not used to record themselves and speak up in class, these teachers believe the students might feel ashamed to do so by using the CAPPT. These teachers want to avoid that situation.

Five teachers claim to feel more competent in teaching English pronunciation. One teacher even admits having improved his own pronunciation because of working with the CAPPT. Most teachers indicate that they have benefited from the clear structure and pedagogy of the TPD programme, which made coping the new pedagogical strategies into their own teaching practice easy. The enhanced self-efficacy causes teachers to deal with the aspects of the TPD programme more often.

The teachers who do not indicate to have become more competent in teaching English pronunciation do mention that they are more aware of the importance of pronunciation. For them the TPD programme worked as some sort of wake-up call, and made them realise their students could benefit from extra attention to English pronunciation, be it to enhance the students' intelligibility or credibility (Hermans & Sloep, 2015; Lev-Ari & Keysar, 2010). This group of teachers claim to have had the ability to teach pronunciation before working with the CAPTT, because of their experience, but did not consider it to be important enough to spend time on in class. With an enhanced awareness came renewed interest in the topic of pronunciation teaching, causing these teachers to change their teaching behaviour and implement some of the TPD programmes aspects, and in that way positively affect the main goal of providing students with more English pronunciation teaching in EFL lessons.

Three teachers indicate they have become more aware of the importance of teaching pronunciation and the existence of the pitfalls for students. Two teachers also mention they were aware of not paying any attention to the pronunciation difficulties their students struggled with, but now realise how important it is. Two teachers also mention the fact that pronunciation has become an item on every team meeting's agenda.

Five teachers express their intention to spend more time on pronunciation teaching and promote pronunciation teaching by either making it an important issue during team meetings, so gain more support, which can also lead to finding more useful materials (course books, websites etc.) or by embedding the new pedagogy in their teaching practice. Three teachers claim to have already pointed out websites for pronunciation practice to their students.

Two teachers claim that peer pressure for students is the reason for them not to take over the TPD pedagogy. Students feel too ashamed to speak up in class or record themselves. Four teachers indicate that a lack of time is the main reason not to spend time on teaching pronunciation and two teachers indicate that there is no point in discussing the topic with fellow teachers, as they are all pressed for time because the curriculum is already packed with other aspects of English teaching.

## 6. Conclusion

From the interviews it appears that lack of time is the most important demotivating influence on using the CAPTT or embedding aspects of the TPD programme. In particular secondary school teachers claim that their programme (curriculum) is packed and that using the CAPTT or covering all the TPD aspects is impossible. It also prevents most teachers from discussing teaching English pronunciation with colleagues because they fear a lack of interest, as every colleague is busy as it is. As long as there are no clear stakeholders and staff members who make it their goal to change school policy and promote change, in any way, implementing new ideas and changing classroom practice will come down to individual teachers' motivation and personal interest. Depending on a TPD programme's measurable influence on student achievement and the teacher's beliefs in the importance of that particular content-knowledge for his students, a teacher might change his teaching behaviour or classroom practice. However, if there is no support from staff members or colleagues after the TPD programme has ended, and there is no available time to really embed new classroom pedagogies, a TPD's influence might not reach any further than an occasional classroom.

The two teachers claiming to teach all the aspects of the TPD programme and still use the CAPTT work at a school that has decided to embed the full TPD programme in their teaching curriculum. Every teacher involved at this school (which were now six, of which only two took part in the actual TPD programme) now teaches English pronunciation according to the pedagogy of the TPD programme and uses the CAPTT in the classroom practice. This way scaling up has been initiated.

Although the teachers who participated in the TPD programme claim to teach many of the TPD aspect, students find it difficult to perceive these elements in class. However, being unaware of elements of pronunciation teaching in class does not automatically mean it is not happening. It is clear that they perceive more elements than students who were taught by teachers who did not participate, even though most of those teachers claimed to teach those aspects as well. A higher score for items 21, 22, and 23 for students of the participating teachers is an indication of the sustainability of specific aspects of the TPD programme. They deal with three of the six error-type categories dealt with in the TPD programme. Although some non-participation teachers claim to teach pronunciation according to the pedagogy of the TPD programme, their students

do not perceive these specific element in the classroom practice. Most of the participating teachers indicated that they were not actually teaching pronunciation before the TPD-programme (Hermans et al., 2017). Now all participating teachers indicate that they deal with aspects of pronunciation teaching in their classroom practice. Although their students do not perceive all the TPD aspects teachers claim to facilitate, they perceive various aspects of pronunciation teaching in their classroom practice. In that way the TPD programme was successful. It was the stakeholder's intention to bring pronunciation teaching back into the EFL classroom.

Further research is necessary to determine whether over time pronunciation teaching is still going on and whether the adaptation and embedding of specific elements happened in a way that still leads to better student achievement. A year after the programme had ended there were already signs of simplifying the pedagogy used in the TDP programme. Most teachers were not working with the CAPTT and were not showing videos or recording students' performances. If teachers only copy a few aspects the effect of the TPD programme on initial improved student achievements are likely to be reduced.

The participating teachers claimed that lack of time was the major cause for not using some the pedagogical aspects of the TPD programme. Most teachers did not use the CAPTT anymore and refrained from recording students or showing videos. A lack of time was also the reason why some teachers refrained from discussing teaching pronunciation with colleagues, as the existing curriculum already caused teachers to feel pressured for time. Avalos (2011) states that we know little about how pervasive changes in a teacher's behaviour and classroom practice due to a TPD programme are and to what degree they sustain continuous efforts to move ahead. From the interviews it appears that most teachers felt more competent teaching English pronunciation (enhanced self-efficacy) but they already chose to spend less time on pronunciation teaching compared to the time spend on it during the running time of the TPD programme. Avalos also mentions the importance of school policy, teachers' accountability and the need for high score on standardized exams. Our secondary school teachers all indicated that in order to meet their school curriculum requirements they needed to reduce the teaching hours on pronunciation, compared to the time they were able to spend on it during the two years running time of the TPD-programme, to prepare students for other tests. This would suggest that school policy and management priorities were not in line with the stakeholders' priorities. Of course to be able to sustain change teachers should feel

supported by school policy makers. Any TPD programme which is not supported by school leaders is in the end bound to have unsustainable effects on teacher behaviour and student outcome.

In our case the stakeholder was a teacher training college that was struggling with the pronunciation skills of its first-year student-teachers of English. Although the TPD programme initially resulted in better student achievement (influence of CAPTT on students' English pronunciation skills) and teachers felt more competent teaching English pronunciation, the effect size might be reduced in time due to a lack of school policymakers' support. Although the over-estimation of Dutch speakers of English' pronunciation skills is mentioned more often in various reports (Hermans & Sloep, 2015) the topic is not (yet) a priority on the political agenda of the Dutch educational policymakers. School policymakers will automatically focus on political policymakers as the scores for standardized national exams still determine the quality label of secondary schools.

The bachelor students were offered a minor English course, which focused on basic English skills. The school policymakers were rather free in determining the contents of this course as it was not rounded off with any national standardized exam, but with official Cambridge Advanced or Proficiency English certificates. Here the match between teachers' and students' needs on the one hand and the contents of the TPD programme on the other, were a perfect match, resulting in a complete embedment of all TDP aspects. All teachers, even those who did not participate in the TPD programme now work with the CAPTT, which automatically results in scaling up, effecting about 250 bachelor students each year.

For a TPD to become successful and to lead to sustainable change in teacher behaviour we would like to suggest a ranking order of importance for Timperley's (2007) effective contexts for promoting teacher professional development that influence student outcome:

- 1: challenging prevailing discourses
- 2: consistency with wider trends in policy and research
- 3: active school leadership
- 4: teacher's engagement
- 5: external expertise
- 6: extended time for learning opportunities
- 7: participation in professional communities of practice

As our initial educational challenge was not determined by political policy makers, and therefore not a priority for secondary school leaders, we depended heavily on teacher's engagement in the hope that the stakeholder's (teacher training course) arguments for the necessity to implement the TPD programmes aspects in the teachers' day to day teaching practice were strong enough. Teachers felt intrinsically and extrinsically motivated to take part in the TPD programme and a year after the programme had ended there were still perceivable aspects of the TPD programme in the teaching of the teachers who participated in the TPD programme.

Meeting the conditions needed for the contexts ranked 4, 5, 6 and 7 led to better student achievements and changed teachers practice. However, without good conditions for the contexts ranked 1, 2 and 3 there is no guarantee for sustainable teacher change, and with that for sustainable better student achievements.

## Chapter 6

### General discussion

## 1. Introduction

### 1.1 teacher and teacher professional development

This dissertation reports the effort to monitor the full process of teacher professional development, from the initial stages of defining the educational challenge up to research into the sustainability of a professional development programme. Research shows that teacher quality is significantly and positively correlated with student attainment and that it is the most important within-school aspect explaining student performance. Its effects are much larger than the effects of school organisation, leadership or financial conditions (Darling-Hammond, 2000; Marzano, 2003; Hattie & Timperley, 2007; Hattie, 2009; Van Veen et al., 2010). Insight into what causes teachers to change their teaching behaviour or what hinders teachers to adopt and embed new teaching ideas is crucial for every stakeholder in need of educational change and for every designer of professional development programmes. We studied various contexts that play an important role in the sustainable success of a teacher professional development (TPD) programme (Timperley, Wilson, Barrar, & Fung, 2007; Timperley, 2008), and established a link between research and actual teaching practice, involving teachers in a two year running professional development programme.

Diana Laurillard (2012) argues that a 21st century education system needs teachers who work collaboratively to design effective and innovative teaching. We focussed on the teachers' specific needs associated with student achievement, believing that identifying those needs has a more positive effect on both student achievement and teacher-satisfaction than a more holistic approach in which teachers themselves decide on their needs (Antoniou & Kyriakides 2013). In that way we did not fully follow Laurillard's (2012), Hattie's (2013) and Mor and Mogilevski's (2013) approach, as they see the teacher as the initiator of defining any educational challenge.

There is a second reason for defining the educational challenge ourselves, without teacher involvement. In order to be able to involve teachers from the initial stages of defining the educational challenge onwards it, would require certain conditions at a teacher's workplace to be met even before this first step could be taken. School leaders should have already facilitated teachers in a way that they would have been able to devote time to thinking about an educational challenge they would like to address, without being

hunted by the school's curriculum and short-term students' achievements or running the risk of being called to account too soon. So in spite of Hattie's emphasis on the importance of school leadership and support (Hattie, 2013), we were not able to engage school leaders to promote our TPD programme. This research initially depended on the motivation, needs and beliefs of teachers to be involved in a cycle of inquiry learning, voluntarily. The first important task for the principal investigator (PI) therefore was to convincingly argue that there was a general need to address this educational challenge in the hope to motivate teachers to take part in a cycle of inquiry learning. Without the support of school leaders this turned out to be a major challenge, as lack of time, because of all the curriculum requirements, turned out to be the main reason for teachers not to take part or to end participation prematurely. The stakeholders' position relative to management was not strong enough to ensure all teachers who started the TPD programme continued to be committed until the needed data was provided.

### 1.2 Context of the TPD programme

In order to be able to study the effects of a TPD programme on teacher behaviour we first needed initial research in order to create a TPD context that would motivate teachers to get involved. The PI's experience with pronunciation teaching at the teacher training college provided the necessary stimulus for initial research into the causes of Dutch students struggling with phonological interference (speaking English but replacing English phonemes, with Received Pronunciation being the reference, by Dutch phonemes). As for Dutch student-teachers of English acquiring a near-native English accent (with teacher training colleges and universities in the Netherlands primarily focusing on Received Pronunciation or General American) is the aim, a lot of remedial teaching is spent on teaching pronunciation.

Although many linguists reject the necessity for a near-native English pronunciation for foreign speakers of English, claiming that intelligibility is the only important aspect of teaching pronunciation, the expectations for a non-native teacher of English are higher, as they also act as a role model for their students. This, combined with the notion that a good English accent also enhances the credibility of the speaker (Morley, 1987/1988; Beebe, 1978; Lev-Ari & Keysar, 2010.) leaves us with the question why

teaching English pronunciation is being neglected in secondary education. If a good English pronunciation adds not only to the intelligibility of the speaker, but also to the credibility, and being able to speak English is the most important tool for students who are going to operate in a globalising world, why do we accept so much phonological interference when our students at secondary school level speak English? Why do we accept them not to be able to pronounce the voiceless and voiced ‘th’ (/T/, /D/) properly, even after six years of English as a Foreign Language (EFL) training? Why is intonation or aspiration never discussed at secondary school level, if those aspects add to a more intelligible and credible level of English pronunciation? Why not focus on those mistakes that occur in the pronunciation of almost every Dutch speaker of English?

2 Findings and insights from this research

2.1 Initial research to establish the context of the TPD programme

The first part of this research (Chapter 2) is all about error type categories that most Dutch speakers English struggle with. In, for example, *Teacher’s Guide to Interference* (Swan & Smith, 2001) or *English pronunciation for student teachers* (Gussenhoven & Broeders, 1997) a lot of information is given on possible phonological interference for Dutch speakers of English. However, we were interested in a ranking order of those possible error types so that we could address the most commonly made mistakes in a teaching tool (TPD programme) that would make it possible for teachers to test in a time- and cost-efficient way. In Chapter 2 we described this process. With our findings (our ranking order of six error type categories) we were able to answer our research question ‘Which pronunciation mistakes are still prominently present in students’ English pronunciation after two years of secondary education and after finishing secondary education in the Netherlands?’ (Chapter 2). With this answer and our argument on the importance of teaching English pronunciation (the effect on the intelligibility and the credibility of the speaker, operating in a globalising world) we were able present a convincing educational challenge for teachers of English and develop a concise TPD programme on teaching English pronunciation which would not scare off teachers because of time-investment issues.

We did not take up gender as a variable in our preliminary analyses (Chapter 2) because after comparing the results of the number of possible mistakes students could make, we discovered no notable difference between the mistakes made by male and female participants. Table 1 presents the female and male students whose sound files were analysed.

Table 1: Female (n= 12) and male (n= 13) students

student ID	gender	level	age
1 Bach	female	Bachelor 3rd year	21
2 Bach	male	Bachelor 3rd year	22
3 Bach	female	Bachelor 3rd year	23
4 Bach	male	Bachelor 3rd year	22
5 Bach	female	Bachelor 3rd year	23
6 Bach	female	Bachelor 3rd year	21
7 Bach	male	Bachelor 3rd year	23
1 Secbil *	male	Secondary school 3rd form	14
2 Secbil	female	Secondary school 3rd form	14
3 Secbil	male	Secondary school 3rd form	14
4 Secbil	male	Secondary school 3rd form	14
5 Secbil	female	Secondary school 3rd form	14
6 Secbil	male	Secondary school 3rd form	14
7 Secbil	male	Secondary school 3rd form	14
8 Secbil	male	Secondary school 3rd form	14
9 Secbil	male	Secondary school 3rd form	13
1 Sec	female	Secondary school 3rd form	14
2 Sec	female	Secondary school 3rd form	14
3 Sec	female	Secondary school 3rd form	14
4 Sec	male	Secondary school 3rd form	14
5 Sec	female	Secondary school 3rd form	14
6 Sec	male	Secondary school 3rd form	14
7 Sec	female	Secondary school 3rd form	14
8 Sec	male	Secondary school 3rd form	14
9 Sec	female	Secondary school 3rd form	13

\* Secbil = students receive more English teaching hours



Figure 1 presents the comparison in number of mistakes per error type category made by female and male students. The number of mistakes students could make differed per error type category.

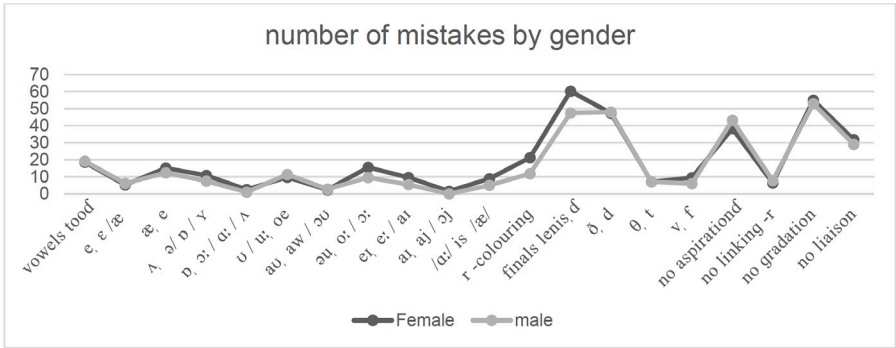


Figure 1: Number of mistakes per error type category made by female and male students

As we focused on typical mistakes Dutch speakers of English make, we were aware of our TPD programme being specifically designed for our target group, and because of that our CAPTT is of far lesser value to any teacher who has to teach other non-native speaker of English with another mother tongue than Dutch. Even in a multi-cultural Dutch classroom, other error type categories might be more prominent than the six error type categories in our CAPTT. But the method used in finding the most prominent error type categories for our CAPTT, and our pedagogy used to teach pronunciation, can be applied to any other group of non-native speakers of English, regardless of their L1 background. Initial research into the most prominent pronunciation mistakes made, caused by any L1 on L2, is of utmost importance.

From the start we were more interested in rekindling the teachers' interest in teaching pronunciation than in promoting the usage of our computer-assisted pronunciation tool. The offered pedagogy for teaching pronunciation was one that teachers could implement without using the teaching tool, and if a teacher considered other error type categories to be important as well, the same pedagogy could be applied to these error type categories.

## 2.2 The computer-assisted pronunciation tool (CAPPT)

In line with the recommendations of innovation theory (Rogers, 2003), the CAPTT (Chapter 3) was developed in a way that it would demand minimal preparation time for teachers to use. Even during the lessons, a minimal effort of teachers would suffice. After a teacher's brief introduction to the topic of that lesson the CAPTT would take the students by the hand, step by step. As the tool was set-up with limited technical options, and only offered materials dealing with the six error types, there was no further technical distraction for students and the tool could be offered free of costs. There were no difficulties concerning the access, as students were able to use their own mobile phones and the schools' free Wi-Fi connection. Of course it was important to test the CAPTT under similar conditions. Schools offering free Wi-Fi and students possessing their own mobile phones is the rule rather than the exception in the Netherlands. We were aware that this is not the case in many other countries. However, as said before, the online tool is a means for presenting a pedagogy for teaching pronunciation. A teacher could easily adjust the online version to his/her own (not online) classroom situation.

Even though teachers did not play a major role in the teaching of the new pedagogy, the results showed significant improvement in student achievement in five of the six error type categories, and with these findings we were able to answer our research question *'Is there a change in the number of pronunciation mistakes Dutch learners of English make in the error type categories selected, before and after working with the CAPTT?'* (Chapter 3).

We assumed these findings to work as an incentive for teachers to embed the CAPTT in their teaching practice. However, the new role of the teachers forced upon them by the CAPTT, that of being more of a guide than an instructor, seemed not to be a satisfactory one for some teachers. As the CAPTT was so easy for students to use, so the need for a teacher to instruct was absent, some teachers felt like outsiders, not involved in the teaching and learning process. Our intentions to take away the possible hesitations for using ICT in the classroom beforehand, by making the tool as teacher- and student-friendly as possible, resulted in some teachers feeling as if they had lost their teacher-identity. This, next to the lack-of-time issue, might be a cause for some teachers ending up ignoring the online tool (see Chapter 4 and 5), but only applying aspects of the TPD's pedagogy in their own teaching practice. Not the interviews, but later informal conversations with individual teachers gave us this insight. This suggests that

the questions during the interview did not offer all the opportunities needed for teachers to elaborate on issues that caused them to not embed the CAPTT in their teaching practice. This issue (the CAPPT being considered as a too much “stand-alone” tool, excluding the need for teacher-interference) being so far from the PI’s expectation, might have caused the interview to be too much focused on the issues the PI did expect.

After testing the CAPTT in the classroom in test phase 1, some teachers also suggested that students could use the CAPTT at home as some sort of flipping-the-classroom activity (Waldrop & Bowdon, 2015) or remedial practice. We do not believe in students practising pronunciation individually, but a teacher dealing with pronunciation in class and pointing out the extra materials of the CAPTT, might be using a successful strategy to achieve better student results.

The findings in Chapter 4 showed that teachers were intrinsically and extrinsically motivated to use the CAPTT or its pedagogy in their future teaching. The a-PLOC test indicated that apparently teachers intended to use the CAPTT because they found it interesting and challenging to use (potency) and also because they believed its use is connected with their identity as being a teachers (integrated) as well as that they find the CAPTT a useful tool. However, there is also an external force that pressures them to use the CAPTT (extrinsic) as teachers believe they would be thought less of as an English teacher, not having the skills to teach pronunciation.

Some teachers indicated they were already using the pedagogy in lessons that were not specifically devoted to pronunciation teaching. From the interviews, we learned that most teachers felt more skilled to teach aspects of English pronunciation and the CAPPT gave them a structured pedagogy for dealing with it in class. With these findings we feel we were able to give a positive answer to our main research question: *‘Can we provide evidence of teacher professional development by involving teachers in practice-based research in which they implement and test a new teaching design?’* (Chapter 4).

Although the CAPPT had proven (Chapter 3) to significantly improve student results for five of the six error type categories, teachers still suggested some changes to the CAPTT after the first test phase, as they considered the procedures to be too strict and the investment of seven lessons to be too time-consuming. Some teachers also felt that it was necessary to create a safer environment for students to record themselves. They

worried about students fearing that peers would utter negative responses when recording themselves in class.

We do believe that it is important to start recording students from the first year at secondary school onwards and create a portfolio of sounds for every individual student, in order to be able to measure progress through the years. Students at the age of twelve are not yet under the same peer pressure of young adolescence, and once used to being recorder in class will make it common practice later on. Students also feel peer pressure when they need to present things in class. Starting at a younger age might take away this uncomfortable feeling. It is questionable that we start these activities at the age of fourteen or fifteen, when peer pressure really sets in (Ryan & Ladd, 2012).

After test phase 1, some teachers started to use the CAPTT as some sort of flippingthe classroom activity, with students using the CAPTT at home and send in their recordings by mail. These recordings (or some of them) were discussed in class (analysed according to the protocol in the CAPTT) so students were able to listen to and give feedback on other students’ recordings as well. Teachers indicated that this saved teaching time and they were able to play the role of instructor instead of guide once again, making them feel less “redundant” in the learning process. The student results after the post-intervention test in test phase 2 showed no significant difference compared to the results after test phase 1. Therefore, this adaptation of procedures did not influence the student results but it enhanced teacher-satisfaction. As we already indicated, for sustainable success of TPD programmes, it is important to take into account not only the students’ needs but also the teachers’ needs. In this respect the fact that teachers indicated they would rather work with the TPD programme according to the procedures of the second test phase was valuable.

## 2.3 Sustainable change

The findings in Chapter 5 indicated that we were able to sustainably change (moderately but significantly) teachers’ teaching behaviour and beliefs towards teaching English pronunciation in EFL lessons. A year after the research had ended we measured not only the teachers’ beliefs of facilitating and using aspects of the TPD programme but also the

students' perceived teacher's effort for teaching English pronunciation. The findings told us that there is a significant difference in the perceptions of the students taught by the participating teachers compared to the students that were taught by non-participating teachers. The students taught by the participating teachers more often gave high scores for perception to some of the items which were linked to teaching more difficult aspects of English pronunciation in class. With these findings we believe we were able to indicate evidence of sustainable TPD, with which we were able to answer our research question *'What evidence can we provide of sustainable change in teacher behaviour and classroom practice that results from a TPD programme?'* (Chapter 5).

### 3. Affordances and limitations of the research

Timperley (2008) deduced four important understandings from evidence-based research on TPD.

- 1: *Student learning is strongly influenced by what and how teachers teach.*
- 2: *A TPD programme to be set up in a way that is responsive to the ways in which teachers learn.*
- 3: *Teaching is a complex activity.*
- 4: *Professional learning being strongly shaped by the context in which the teacher practises.*

In the following paragraphs we will discuss the affordances and limitations of this research in the light of these four understandings.

#### 3.1 The influence on student learning

Timperley's (2008) first understanding is that *student learning is strongly influenced by what and how teachers teach*". Our preliminary research activities (Chapter 2) showed that most English teachers in the Netherlands do not invest time in teaching English pronunciation, which, in our belief, is why certain pronunciation mistakes are still present in the English pronunciation of students after leaving secondary education in the Netherlands.

As TPD mainly focuses on in-service teachers with some years of teaching experience, the important role teacher training colleges could and ought to play in educational innovations (Livingston, 2016) is often neglected. Next to that, novice teachers are often expected to teach according to institutionalised school traditions. From experience we see that new teaching approaches and innovations are often part of a student-teacher's training, but as soon as they face their traineeship student-teachers are advised not to experiment and stick to what senior in-service teachers consider to be good practice. Herein lies the root of a major problem in our belief. Student-teachers and novice teachers are demotivated to try out new teaching ideas taught at teachers training colleges and copy the pedagogy of in-service teachers, as that will smooth their way through the traineeship period. Consequently, a perfect opportunity for diffusing teaching innovations in a cost- and time-efficient way is missed. In a context of teacher training colleges and researchers being detached from the actual teaching practice at schools (as is still very often the case in the Netherlands, though more and more the realisation of the need for collaboration arises) and in which teacher training colleges have no power in determining educational policies at, for example, elementary or secondary school level, innovation processes cannot adequately diffuse from novice teachers, trained according to new ideas and pedagogical insights, to in-service teachers and school organisations. This, next to the general notion that novice teachers seldom take a leading role in educational innovations at schools, (due to the fact that they are considered to lack the experience needed to know what good practice really is) educational change is a slow process.

So in order to have an effect on student learning, we need to be able to influence what and how teachers teach. For this we suggest a stronger link between research, teacher training colleges and actual school practices. As some teacher training colleges in the Netherlands are already collaborating with secondary schools, there is a perfect learning opportunity for all parties involved. A good example of meaningful collaboration is set by the Fontys Teacher Training Collage, in the city of Sittard, in the Netherlands. Various secondary schools throughout the province of Limburg are now aligned with the teacher training college, working together on aspects of teacher training at the workplace (traineeship of student-teachers) and research (obligatory student-teachers' research activities at traineeship schools). This alignment also benefitted this research as participation in research activities is becoming a regular activity for all the secondary schools involved.

This collaboration allows teacher educators to discuss new ideas on teaching with in-

service teachers who, in turn, are appointed to mentor student-teachers during their traineeship. As teacher educators expect student-teachers to teach, incorporating innovative methods and pedagogies according to what they have learned during their teacher training courses, in-service teachers are often faced with new ideas and teaching strategies while observing student-teachers during classroom practice. As the alignment between the teacher training college and the traineeship schools is set up in a way that the teacher educator and the in-service mentor-teacher both assess the student-teacher's achievements, new teaching ideas cannot be disregarded.

With regard to the context of this research (teaching English pronunciation in EFL lessons) we can give a practical example of successful collaboration between our teaching training college and schools for secondary education. As the teacher training college demands from its student-teachers to use the target language (in our case English) for 80% or more in an EFL lessons, and student-teachers are trained to detect and correct pronunciation mistakes (according to the pedagogy of the used CAPTT in this research), more and more time is devoted to speaking English in class and on pronunciation. By observing student-teachers in-service teachers experience that using the target language for most part of the lesson does not cause any significant difficulties for most students, even at the lowest levels. It being too difficult for those students to understand classroom English had been an argument for not using the target language for most part of an EFL lesson by many in-service teachers. Now they experience that this is not the case when student-teachers use English for almost the entire lesson. It even results in students answering in English, which is a situation that all English teachers should strive for. Without the teacher-educator's influence and the clear defined roles of the teacher-educator and in-service teacher (so without the alignment between the teacher training college and the traineeship school) a student-teacher might have received the advice not to use the target language too much at an early stage of the traineeship, resulting in the in-service teacher not being able to experience that using the target language this way, has a positive effect on students.

More and more new ideas are brought in this way. We see in-service teachers using ICT materials found or designed by student-teachers during their teacher training. We see in-service teachers experimenting with new ways to differentiate in class, as they were triggered by something a student-teacher experimented with in class. We see teachers trying out problem-based designs, not because of TPD, but because of a student-teacher's

problem based assignment that went well in class. In order to influence what and how teachers teach, we should not ignore the influence that teacher training colleges, novice-teachers and even student-teachers can have on TPD and educational innovation. In our beliefs a strong alignment between research, teacher training colleges and actual school practice will lead to a better diffusion of educational innovation and to more effective TPD.

For this very reason, in this research we focused on establishing a strong link between research, the teacher training college and actual school practice (Antonioni, Kyriakides, & Creemers, 2015). The preliminary findings (Chapter 2) determined the context of our TPD programme (with the educational challenge being the aim to improve the English pronunciation of Dutch learners of English, by professionalising teachers of English) for which a new teaching tool (our CAPPT) was designed. As leading research on TPD indicates that for effective TPD involving teachers in a cycle of inquiry learning (Laurillard, 2013; Loucks-Horsley, Hewson, Love, & Stiles, 1998; Mor & Mogilevski, 2013; Stigler and Hiebert, 1999; Timperley et al., 2007) is important, we involved teachers in a two-year running TPD programme in which they implemented and tested the new teaching approach to teaching English pronunciation. The findings of the pre- and post-intervention tests (preceding and following test phase 1 and 2) showed significant student-improvement (Chapter 3). It seems fair to claim that our training did make a difference of an educationally interesting size.

After test period 1 (the first year of working with the CAPPT) the post-intervention test already showed significant student-improvement (Chapter 3). Teachers were interviewed and asked to comment on their teaching experience with using the new teaching approach. On the basis of these findings the TPD programme was fine-tuned to better fit the teachers' teaching practice.

Even though the CAPPT aimed to provide a time-efficient method for teaching pronunciation, teachers stated that following its exact procedures had been too time-consuming. Most of the teachers indicated that, although they were now more aware of the pronunciation mistakes their students made, and they were more skilled to give feedback to students making these mistakes, they would rather correct students the moment certain mistakes occurred while they were speaking in class, than follow the strict procedures in the CAPTT (offering seven lessons devoted to the six error type

categories). With teachers feeling more competent in teaching pronunciation and using the pedagogy presented in the CAPPT, we feel that our initial goal (i.e., finding a way to bring back pronunciation teaching in EFL lessons) has been reached. Teachers using the pedagogy presented in the CAPPT, without using the online CAPPT itself, will still be able to teach English pronunciation adequately. In our view the awareness of what the important pronunciation aspects for students are, and the knowledge of how to deal with these aspects in class, will lead to a more effective way of teaching English pronunciation. We also believe that our suggested pedagogy is suitable for any secondary school in the Netherlands, though for schools with a multi-cultural student population it might be worthwhile to invest in preliminary research in order to determine what the set goals (the ranking order of the most predominant error type categories mistakes, Chapter 2) for a particular group of students should be.

### 3.2 How teachers learn

As findings of student improvement had already been significant after test phase 1, most teacher-input and advice for improvement of the CAPPT was not student-oriented, but teacher-oriented. In other words, proof of better student results does not automatically mean better teacher-satisfaction or guarantee a sustainable change in a teacher's classroom behaviour. This is in line with a second understanding Timperley (2008) describes. She emphasises the importance for a TPD programme to be set up in a way that is responsive to the ways in which teachers learn. Our participating teachers already showed intrinsic motivation by taking part in this inquiry-based learning voluntarily. They were also aware of the CAPPT's positive effect on student learning after test phase 1. However, teachers need to perceive presented knowledge and teaching skills not only as useful (for students) but also immediately applicable in their teaching practice. If retrieval and application of information is already perceived as too time-consuming or difficult, teachers might opt to stick to traditional teaching, regardless of research findings indicating better student achievement. After test-phase 1 teachers indicated that using the CAPPT and following the strict procedures cost too much time. They wanted to use the pedagogy of the CAPPT in their lessons without following the researcher's strict procedures. In our research the difference between the student results of test phase 1 (teachers following the strict procedures researchers prescribed) and test phase 2 (teachers using the new

pedagogy the way they considered it to best fit their classroom practice) did not show any significant difference. This showed that teachers were able to adequately modify the researchers' teaching design to better fit their classroom practice. For us this was a good example of a successful collaboration between research, the teacher training college and actual school practice. With taking into account the teachers' needs and by using the practitioners' input, based on their experience with implementing and testing our new design, we avoided teachers to end their participation or ignore the TPD-programme's aspects in their future teaching.

Even though we made an effort to provide teachers with a time- and cost-efficient teaching tool we underestimated the impact of using ICT as a vehicle for our TPD intervention. Making the CAPPT as user-friendly as possible did not automatically take away every teacher's hesitation to use ICT in class. Although they were interested in the presented pedagogy in the CAPPT and the TPD programme's content knowledge, most teachers stopped using the CAPPT after the TPD programme had ended. Teachers claimed that using ICT in the classroom is still not as standardised and easy to arrange as researchers might assume. As professionalising teachers in the field of teaching English pronunciation, and not in using ICT in the classroom, was the goal of the TPD programme, it would have been worthwhile to have focused more on how teachers would like to learn. In our case it would have been more beneficial for some teachers (and so, their students) to have been provided with the content knowledge on paper and to have received specific instructions on how to focus on the physical aspects of English pronunciation. To avoid teachers ending the programme prematurely or not taking up pronunciation teaching in their future practice an alternative for using ICT as a means to present new content and pedagogical knowledge is recommending.

### 3.3 The complexity of teaching and teaching the teacher

Our example shows teachers' knowledge and beliefs determine if and how they fit TPD programme aspect into their classroom practice. This matches Timperley's third understanding on TPD (Timperley, 2008) in that teaching is a complex activity. As we demand teachers to get a deeper understanding of what their students need and how they



learn, we should not ignore the fact that when we ask teachers to learn, they have their individual needs and beliefs as well (Borko, 2004). Teachers' knowledge and their beliefs about what is important to teach, how students learn, how to manage student behaviour and meet external demands play an important role (Timperley, 2008). This also means that one and the same TPD programme can have a different effect on individual teachers, and, consequently on student achievements. A "one size fits all" TPD programme does not exist, as teachers retrieve and applicate from TPD what they think is worthwhile teaching. The following example of how teachers take from a TPD programme what they consider useful according to their own beliefs is taken from this research.

Andrew (for privacy matters the name is fictional) is a teacher of English with a Moroccan-Dutch background, teaching in the Netherlands. As our TPD programme aimed to professionalise teachers of English in the field of teaching English pronunciation so that their students could achieve a more intelligible and credible English pronunciation, we were met with Andrew's different point of view on the aim of our TPD. Although Andrew did not disagree with our argument that better English pronunciation leads to an enhanced credibility of the speaker (Lev-Ari & Keysar, 2010; Lippe-Green, 1997; Munro, 2003) he rejected the idea that striving for a near-native pronunciation for the sake of enhancing his students' credibility when speaking English was a priority. He was willing to use the CAPPT to enhance his students' intelligibility but he claimed that attaching credibility to a more near-native pronunciation might strengthen some (native-?) speakers' sense of superiority and might insult other speakers who spoke English with a foreign accent. For him credibility was no issue. Bringing across the message, so intelligibility, should be the goal.

In our case Andrew's negative attitude towards teaching English pronunciation as a means to enhance the speaker's credibility did not influenced the way he dealt with the TPD programme. As our CAPPT and the approach used (and the goals set for students) focused on achieving better English pronunciation (in the six predominant error type categories for Dutch speakers of English) and a better pronunciation will lead to enhanced intelligibility in general, Andrew was able to use it for this purpose. Because of the strict research procedures, the elements in the CAPPT specifically aiming for a more credible pronunciation, but not addressing intelligibility issues (e.g. using aspiration after syllable-initial /p/, /t/ and /k/), were not ignored by Andrew. It is, however, fair to

assume that Andrew will not embed all of the TPD programme's elements in his future teaching practice due to his personal beliefs as a teacher.

It is impossible to meet all the individual needs of teachers in one and the same TPD programme. We, however, believe that the more the designers of a TPD programme are aware of social and culture aspects of the targeted group of teachers and his or her students, the more effective he or she will be in designing a TPD programme resulting in sustainable teacher change and better student achievement. In our research all the teachers, except for Andrew, believed that a good English pronunciation and the credibility of the speaker are intertwined. In a setting where striving for a better English pronunciation to enhance the credibility of the speaker would be looked upon as a social or cultural issue (e.g. teachers believing that some native or near-native speakers regard English, spoken with a foreign accent, as a social marker for certain groups of non-native speakers), the CAPPT could still result in better student-results but would never result in sustainable teacher change and better long-term student results as there is no match with the set student goals of the TPD programme and the teachers' beliefs. If the defined goals for students are clear and match the teacher's beliefs about what is important for his or her students, the way a teacher will use new knowledge and skills is of lesser importance as long as he or she is aware of what works for his or her students and the set goals for students are the rationale for the teacher's teaching practice.

### 3.4 The context in which the teacher practises

The aforementioned can automatically be linked to Timperley's fourth understanding of professional learning being strongly shaped by the context in which the teacher practises (Timperley, 2008). Teachers' learning is influenced by what happens in the classroom, the school, the community and the society in which the school is situated and the teachers needs to operate in. For our research we were able to work with schools situated in similar social and cultural settings. Teachers had similar curriculum obligations, school cultures did not significantly differ, but teacher background and personal beliefs still influenced the way teachers learn.

In Chapter 5 we focused on the sustainability of our TPD programme and its intervention.



In the preliminary stages of this research we already faced difficulties with teacher participation. Although plenty of teachers initially agreed to participate, some ended their participation even after receiving all the materials and PI's introductory activities. Some teachers simply seized to answer any of the PI's mails and others mentioned that they had not been able to find time to deal with the CAPTT in class. Others indicated, when asked to hand in the final data, that they had used the CAPTT but were not able to organise the pre- and post-intervention tests, making their participation useless for our research as we were not able to gather useful data. With the stakeholder having no political or policy-making authority over the schools of the participating teachers, there were no consequences for teachers not living up to initial participation agreements, which left the researchers with initially 23 teachers spread over five school volunteering to take part, but eleven teachers spread over three schools to actually participate in test phase 1. For test phase 2, 21 teachers spread over four schools volunteered, but in the end 13 teachers spread over three schools participated. In that respect we did not have the optimal conditions for two of Timperley's (Timperley et al., 2007) described contexts for effective TPD: *consistency with wider trends in policy and research, and active school leadership*.

Although we depended on motivated teachers whose participation had been voluntarily, we were able to detect teacher change and behaviour in their classroom practice through perceived teacher's effort for teaching English pronunciation by their students. Teachers still used some of the TPD programme's aspects in their teaching a year after the programme had ended. For some teachers (a minor English course for third-year bachelor students) the entire programme became a standard addition to the already existing curriculum. For this school that meant that also teachers who were not involved in the TPD-programme had to embed the CAPTT in their teaching programme. This way scaling-up happened without any additional stakeholder's effort. The TPD programme's set goals for students was a perfect match with the goal set for bachelor students in the course *Speaking*, which was part of the aforementioned minor course. Next to that, the bachelor students and their teachers were familiar with using ICT in the classroom, which made the implementation of the CAPPT and its straightforward set-up rather effortless. Comparing this with the situation of the participating secondary schools, we found that, although all participating schools had free Wi-Fi, working with ICT devices in the classroom was not something students and teachers practised on a regular basis. Besides that, the goals set for students were not a perfect match with

the schools' obligatory curriculum requirements but depended heavily on the intrinsic motivation of participating teachers. Teaching pronunciation was not the first thing on the teachers' agenda, but seemed more of an extra-curricular activity (a bonus for students). Although working with the CAPPT was considered to be easy, implementing teaching pronunciation in their regular teaching time was not effortless.

Thus, at secondary school level, scaling-up was far more complicated. Although teachers still used aspects of the TPD programme in their teaching (perceived by students) the perceived changes were moderate (but significant). A year after the TPD programme's activities had ended most of the secondary school teachers did not use the online CAPTT anymore but dealt with the error type categories in their own way, to make pronunciation teaching more time-efficient. Although students perceived TPD aspects in class, indicating the sustainability of some elements of the TPD programme, there had been no pre- or post-test to measure the effect of the teachers' efforts to teach English pronunciation. Except for one school putting pronunciation teaching on the agenda for its monthly English department meetings, there were no signs of scaling up, with the risk of pronunciation teaching becoming a teaching activity for the happy few who can find some extra teaching time. And even though the researchers tried to establish an online community of practice, not one teacher felt the urgency to share his/her experiences online. During the interviews teachers stated that working with CAPTT had been so easy for teachers and students, that they did not feel the need to ask or give feedback or share experiences. This way pronunciation teaching became an individual teachers' activity, restricted to his/her classroom, with no chance of spreading amongst a broader group of professionals. Ultimately, for a TPD programme to be considered successful and effective (and to not result in something useful for the happy few who participated), it should have an impact on a broad group of professionals in the field and result in better student achievement for as many students as possible. Scaling-up is an essential next step, once a design has proven to have a positive effect on teacher learning and student achievement in a small scale setting.

The defining of the most important error type categories (Chapter 2) has been crucial for the design of a time- and cost-efficient teaching tool that was able to answer to not only the specific needs of students, but also the needs of teachers. However, it addresses the needs of a specific group of students, namely those with a Dutch (or variety of Dutch) L1 background. As in our multi-cultural society some regional schools have students with

various L1 backgrounds, our intervention tool might not cover all the difficulties those students are faced with. A variety of L1 backgrounds might cause a variety of phonological interference for the L2 that is studied. Although in this study the methodology focused on determining the most common mistakes made by Dutch speakers of English, we are convinced that it can be applied to find the most common pronunciation mistakes for speaker of English with other L1 backgrounds as well. Teachers should be aware of the most common mistakes made by his or her specific group of students. This could mean that teachers have to differentiate in their classroom so that they can offer the appropriate ranking order of most common mistake for that specific teaching context (student or group of students). It is worthwhile for a teacher to invest in finding out about the typical phonological interference-aspects of a certain L1 on English (or any other L2 language to be studied).

### 3.5 Missing contexts for effective TPD

We took initial steps to design, implement and test a new teaching design in a small scale testing environment, using practitioners' experiences and input to make our design better fit the actual teaching practice. In our view our TPD programme resulted in changed teacher behaviour leading to better student achievement. We, however, underestimated the importance of some of Timperley's (2007) described contexts for effective TPD: *consistency with wider trends in policy and research, and active school leadership, which influenced two of Timperley's other important contexts: participation in professional communities of practice and teacher's engagement*. This led to some teachers ending their participation before rounding off the TPD programme, with no further effective means for the stakeholder to continue the teachers' participation. It also meant that teachers did not exchange their teaching experiences, (though they were asked multiple times to do so) by using our online communication service (in the CAPPT) which connected all the participating teachers. Teachers also refrained from discussing new ideas with colleagues.

Although school leaders were informed about the TPD programme, and only played a minor role (only involved in juridical and facilitating aspects of the TPD programme), they were not involved in the research process or the defining of the educational challenge. As said before, this research depended on the intrinsic motivation of teachers only.

Scaling up has been a matter of chance instead of a goal itself. Our mix of subject-content knowledge and pedagogical-content knowledge approach caused individual teachers to change their teaching practice. Although teachers showed intrinsic motivation to use the pedagogy of the TPD programme in their future teaching practice, lack of time, caused by obligatory curriculum activities, seemed to be the most important cause for teachers to not fully embed the TPD programme's aspects in their current teaching practice and discuss the TPD programme's aspects with fellow colleagues. For this TPD programme to become more effective and for scaling-up the teaching approach, the engagement of policymakers and school leaders is of utmost importance.

### 4. The next steps

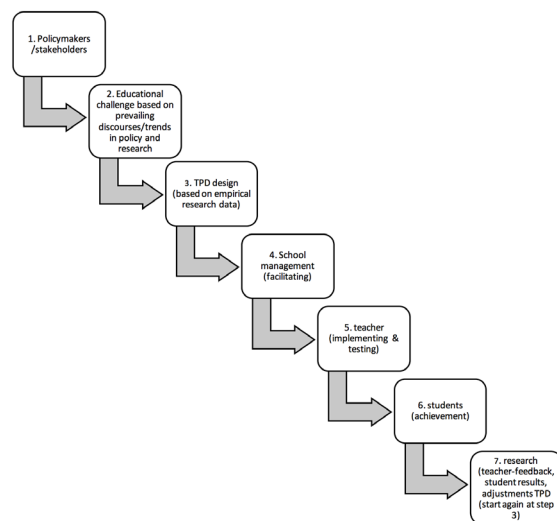
If scaling-up is the next step to take, the issues of engaging policymakers and school leaders, and establishing professional communities of practice need to be addressed, with more power for the stakeholder (teacher training college). Our findings so far can now be used to convince other stakeholders and policymakers of the positive effect of our design on student achievement. As more and more secondary schools (over 130) in the Netherlands teach other subjects than English in English too (Content and Language Integrated Learning, or CLIL), English is becoming more and more important and good English pronunciation skills will benefit today's students who, in their working future, are more likely to operate in a globalising world, using English as their most important communication tool.

For our TPD design to become more effective (and for scaling up) it is important for the stakeholder to stronger emphasise its relevance for the learner (in our case secondary school students) and those who are responsible for this learning process (policymakers, school leaders and teachers). In our view teacher training colleges and universities should play a more leading role in initiating educational innovation. For this a stronger alignment between educational policymakers, research, teacher educators and practitioners in the field should be established.

Although teachers play an important role in educational innovation, we do not believe it necessary for teachers to be the initiators of educational change. If educational

challenges start with challenging prevailing discourses (in which teachers might play an important role) and wider trends in policy and research (Timperley, 2007), initial steps to implement and test new teaching strategies are more likely to be supported by those with policymaking powers (political policymakers and school leaders). This support should result in time and means for teachers to try, fail, adjust and try again new teaching strategies without having to worry about their accountability for the existing school curriculum and the need for high score on standardized exams (Avalos, 2011). For our research the next step would be to present our data to policymakers and stakeholders in order to find the necessary support for further implementation. Without this support our TPD programme might have been beneficial for participating teachers and their students, but will not have the possibility to spread around practitioners in the field, which, in our view, should be the ultimate goal for any TPD programme. In our view there are several important steps to consider for effective TPD. Policymakers and stakeholders play a decisive role in determining the educational challenge. With an educational challenge based on prevailing discourses and trends in policy and research (with policymakers, researchers and teachers already collaborating), and a TPD design based on empirical research, school leaders ought to facilitate teachers (time and means) so that teachers can try out new learned skills and teaching approaches, with a chance to reflect on student achievement. With this reflection tested new teaching practices can be adjusted in order to better fit actual classroom practices. These steps could lead to a cycle of practice-based learning. Figure 2 shows seven steps which we consider ideal for setting up any TPD design.

**Figure 2: Steps for effective TPD**



With the teachers training college not (yet ) being a strong stakeholder with educational policymaking powers, we started this research at step 3 (Figure 2), omitting step 1, 2 and 4. Focussing on these steps will be necessary if scaling up the effect of this TPD programme is the aim.

To gain more insight into the sustainability of a TPD programme, measuring the effect of a programme should also be done after a longer period of time. Measuring the effect after a four or five years will give us more reliable data on the actual teacher change in behaviour. Next to using similar questionnaires in order to find out what teachers still claim to facilitate and students still perceive to happen in class (in the field of pronunciation teaching), it is also worthwhile to test students and compare the results with those of the preliminary tests of our initial research. Effective TPD ought to show significant differences in the number of mistakes (in the six error type categories) students would make then, compared to the number of mistakes made by those students whose recordings were analysed before the start of our TPD programme.

In future research we would also like to further research the individual teacher in relation to his/her students, as we believe that teacher-student interaction also effects teacher behaviour and teacher change. We have already asked teachers and students to fill in a questionnaire on teacher-student interaction, to find out whether there is a link between a certain type of teachers (based on student-perception) and the impact of a TPD programme.

Our research findings stimulated the Fontys teacher training college in Sittard to devote more attention to the necessary teaching skills for teaching English pronunciation in secondary school. In the master course student-teachers analyse pupils' recordings according to the same procedures followed in this research. The six most frequent mistakes dealt with in our CAPTT are the focus of our pronunciation teaching classes for first year students. In our Phonetics course there is more focus on how to teach pronunciation, where before the focus was on only theory and improving the student-teacher's pronunciation. The minor course *English Language and Culture* integrated our CAPTT in the lectures Speaking. We hope and aspire that students who leave our teacher training college to teach EFL at secondary school level, do not only have a near-native English accent themselves, but also possess the teaching skills needed to teach English pronunciation. Our hope is that this, combined with an infused interest in the

aspect of pronunciation as part of the EFL curriculum, will sustainably improve the pronunciation of Dutch speakers of English.

Finally we would like to emphasise that, in a secondary school system such as the one in the Netherlands, in which teachers teach an average of 25 lessons with an average teaching time of 50 minutes per lesson (though more and more schools are organising those teaching hours differently), combined with a variety of other tasks (mentor tasks, facilitating students with special needs, curriculum development activities, traineeship activities etc.) it is not realistic to expect teachers to initiate educational innovations, from defining the educational challenge to sustainable better student achievement. It takes time and means to professionalise and innovate, and the support of school leaders, who, in turn, need the support of policymakers and research.

We would like to make a plea for policymakers and school leaders to enable teachers to take part in evidence based research that aims to innovate education and stimulates innovative teacher behaviour. Teachers need to feel safe to try out end test new teaching approaches without running the risk of being called to account to soon because of obligatory curriculum issues. The easiest way to make sure teachers can experiment with innovative teaching approaches without neglecting the traditional curriculum requirements is to facilitate teachers with extra teaching hours in fewer classes they would have to teach and to stimulate teachers to work together in professional communities of practice. For effective TPD time and support are key issues!

In this research we depended mainly on the intrinsic motivation of teachers to take part in a practice-based research. We also took pains to measure the participants' intrinsic and extrinsic motivation to use and embed TPD aspects in their future teaching after rounding off the TPD project. The outcome, although positive, is the outcome of a group of teachers being already intrinsically motivated to learn more about the TPD's topic. If, however, there had been a top-down decision, (e.g. school management making a TPD programme obligatory for all the teachers) the outcome of a similar TPD programme might have significantly differed from our outcome.

Plenty of research depends on the willingness of volunteers to take part in it. But excluding the extrinsically motivated (e.g. through financial gain, career opportunities, respect from colleagues, demands from management), prevents the generalisation of the

outcomes. In order to measure the effect of any programme that aims to professionalise employees more validly, it is necessary to include also the extrinsically motivated. Building on someone's personal interest is easier than motivating the unmotivated to learn and change their working behaviour. For that reason a broader focus on aspects causing extrinsic motivation should not be ignored. We are very interested in people's motivation to change and adapt, but in the meantime also very eager to make this a smooth process in which we emphasise the need for personalised learning and training. A lot of attention is devoted to aspects of intrinsic motivation and personal beliefs, next to social and cultural based influences on behaviour, but aspects of extrinsic motivation might be just as interesting and effective (Legault, 2016; Dellen & Heidekamp, 2016; Wrzesniewski, Schwartz, Cong, Kane, Omar & Kolditz, 2014). Top-down decisions are often frowned upon, but simply assuming that there is enough intrinsic motivation to professionalise and innovate in every employee, might lead to disappointment. A good starting point for a design aiming to professionalise practitioners in any field, might be considering the demotivating aspects to change traditional working practice first. Support of leaders is crucial if targets to be met are not fully in line with the intrinsic motivation and beliefs of those who have to make it happen. A good balance between intrinsic and extrinsic motivation might be more effective than trying to personalise professional development programmes as much as possible.

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## Summary

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Research showed that teachers are the most important external influence on student achievement (Darling-Hammond, 2000; Marzano, 2003, Hattie & Timperley, 2007; Hattie, 2009; Van Veen et al., 2010). It seems worthwhile to invest in teacher quality and nowadays a variety of teacher professional development (TPD) programmes is offered, from one-day workshops to programmes that involve teachers in a cycle of inquiry based learning, which might run for several years. Some programmes offer specific subject-content knowledge, some pedagogical-content knowledge and others combine both. Sometimes the focus is on developing individual teachers' skills and sometimes collaboration is the main focus.

Although plenty of research papers on TPD programmes have indicated positive effects on teacher skills, fewer have taken into account the effect on student achievement. The sustainable effects of a TPD programme is seldom the topic of a research paper. Teachers might consider a TPD programme to be successful and an enhanced teacher self-efficacy should not be underestimated, but ultimately, we want TPD programmes to have a positive influence on student achievements, and that for a longer period that the running time of a TPD programme.

Next to that it is very important to find out what it is that makes teachers change their teaching behaviour and what motivates them to copy and embed aspects of a TPD programme in their day-to-day teaching practice. Based on knowledge about how teachers learn and what makes them change their teaching ideas, TPD programmes might become more efficient and successful, as developers are aware of which contexts are most effectively influencing the teacher learning process.

In this research we focused on the full spectrum of teacher professional development, from the initial stages of defining the educational challenge and developing and testing a teaching tool, to finding proof of sustainable changes in teacher behaviour and classroom practices.

We were particularly interested in the experiences of teachers who participated in a two-year running TPD programme and we studied the influence of the TPD programme on teacher behaviour. Why and how were they motivated (intrinsically versus extrinsically) to take part in the TPD programme? How did participation change their teaching perspective? We were interested in their motivation (and intention) to embed the new TPD programme's aspects in their day-to-day teaching practice. We also wanted

to find out whether they felt more skilled to teach English pronunciation (enhanced self-efficacy). We were particularly interested in the aspects of the programme teachers consider to be most important and the aspects that influenced their teaching behaviour and beliefs. All of these aspects are important to determine what causes a teacher to change his teaching behaviour. Even proof of better student achievements after a post-intervention test does not always cause teachers to change their teaching practice. If self-efficacy is not enhanced and teachers feel insecure about teaching according to new ideas, or if new ideas ask for more preparation time and the programme does not meet the teachers' expectations, they might revert to old teaching habits. The success of a TPD programme (better student achievements) will only last a short period of time if teachers' needs are not addressed. So chapter 4 focuses on our research question:

*Can we provide evidence of teacher professional development by involving teachers in practice-based research in which they implement and test a new teaching design?*

All the teachers who took part in the first test phase were invited to take part in a semi-structured interview. The interview questions allowed the teachers to narrate their thoughts on the teaching topic (teaching English pronunciation), their former teaching activities concerning teaching English pronunciation, using the new teaching design and their own professional development. We focused specifically on the topic of teacher professional development.

In order to measure teachers' motivation to use the CAPTT we used a measure that was derived from the Perceived Locus of Causality measure (PLOC) of Ryan and Connell (1989). We refer to this as the adapted PLOC measure or for short: a-PLOC. This measure assesses different types of motivation that regulate behaviour as defined by the Self-Determination Theory (SDT) of Ryan and Deci (2000).

The data from the interviews showed that 70 % of the teachers embedded aspects of the professional development programme in their teaching practice. The results from the a-PLOC indicated that teachers were intrinsically and extrinsically motivated to use the CAPTT or its pedagogy in their classroom practice.

In chapter 5 we revisited the schools that were involved in the TPD programme a year after the programme had ended, in order to find out what elements of the TPD programme were still used in the teachers' classroom practice. Our research question was:

*What evidence can we provide of sustainable change in teacher behaviour and classroom practice that results from a TPD programme?*

We looked for signs of changes in the teachers' behaviour, beliefs, intentions, and classroom practice. Once again we conducted semi-structured interview with the focus on teacher classroom practice. Again, we used a measure that was derived from the Perceived Locus of Causality measure (PLOC) of Ryan and Connell (1989) to find out whether there were any changes in the intrinsic and extrinsic motivation of teachers to use the pedagogy tested in the TPD programme. Aspects of the TPD programme were summed up in a questionnaire (4point scale) to find out how many aspects of the TPD programme were still present in the teaching of teachers who were involved in the programme and how often these aspects occurred in their classroom practice a year after rounding off the TPD-programme. Not only the teachers involved in the programme were asked to fill in the questionnaire, but also a group of teachers who were not involved, in order to find out if there was a significant difference in the way English pronunciation was taught between the two groups of teachers. A similar questionnaire was presented to the students of both groups of teachers in order to find out if the students' perception of pronunciation teaching aspects correlated with the teachers' facilitating perception concerning their own classroom practice. The group of the teachers involved in the TPD programme and the group of students of those teachers both identified significantly more TPD aspects present in the classroom practice a year after the TPD programme had ended. This indicates the sustainability of some of the TPD programme's aspects. In chapter 5 we further studied the contexts that caused teachers to change their teaching behaviour (Tymperley et al., 2007), but we also looked for demotivating aspects which caused teachers to ignore new ideas or revert to old teaching habits. Our research question for this aspect was:

*What conditions provide teachers with the best opportunities to learn and sustainably change their classroom practice?*

The results led to the following suggested ranking order of important contexts for effective teacher professional development:

- 1: challenging prevailing discourses
- 2: consistency with wider trends in policy and research

- 3: active school leadership
- 4: teacher's engagement
- 5: external expertise
- 6: extended time for learning opportunities
- 7: participation in professional communities of practice.

Defining the educational challenge that determined the context for our TPD programme was initialised by the first stakeholder: the teacher training college of the Fontys University of Applied Sciences in Sittard, the Netherlands. Year after year remedial pronunciation teaching was required to bring the student-teachers of English to an acceptable near-native level of English pronunciation. Many of the first-year student-teachers failed their pronunciation tests and struggled with typical difficulties Dutch learners of English face when speaking English. In chapter 2 we visited secondary schools to find out what pronunciation error types were most common and frequent among third year students who followed the highest level within the Dutch secondary educational system (VWO) and third year pupils following a bilingual course with more EFL lessons and other subjects than English, taught in English too. Our research question was:

*Which pronunciation mistakes are still prominently present in students' English pronunciation after two years of secondary education and after finishing secondary education in the Netherlands?*

Pupils were recorded while speaking English and the sound data was analysed. The same procedure was applied to third year bachelor students from all over the Netherlands, who studied anything but English. The sound data was analysed and compared. After analysis six error type categories were ranked with error type category one being the most difficult pronunciation aspect for Dutch speakers of English. This was the starting point for defining the educational challenge: improving pupils' and students' English pronunciation skills in these six error type categories.

In chapter 3 the process of developing a computer assisted pronunciation teaching tool (CAPTT) is described. Taking into account the hesitations teachers, students and even school staff members might have with using ICT in the classroom, a website focusing on the six error type categories was designed, with a teacher and a student access. Teachers



were provided with background materials on phonetics and phonology, and students were trained by means of recording tasks and sample videos. Our research question was:

*Is there a change in the number of pronunciation mistakes Dutch learners of English make in the error type categories selected, before and after working with the CAPTT?*

Teachers were asked to use the teaching tool in their classroom practice, following a strict procedure. Before using the CAPPT students and pupils (from now on referred to as “students”) took a pre-intervention test. Students were recorded reading out a pre-structured text and those recordings were analysed to find out how many mistakes in the six error type categories were made. The same procedure was followed in a post-intervention test (after working with the CAPTT in class). The post-intervention test showed significant student improvement in five of the six error type categories.

Chapter 6, presents a general discussion of the findings of this research. We focus on the most important contexts for teacher professional development and the demotivating aspects causing teachers to ignore new ideas. We also discuss the limitations of this research and the need for further research into matters of scaling up a TPD programme’s positive effects and the necessity of monitoring the sustainability of such a programme over time.

## Samenvatting



Onderzoek toont aan dat de sterkste externe invloed op prestaties van studenten wordt uitgeoefend door leraren. (Darling-Hammond, 2000; Marzano, 2003, Hattie & Timperley, 2007; Hattie, 2009; Van Veen et al., 2010). Daarom spreekt het voor zich dat het zich loont om sterk te investeren in de kwaliteit van leraren, met als gevolg dat er tegenwoordig een breed scala aan docenten-professionaliseringsprogramma's (DPP's) wordt aangeboden. Deze DPP's variëren van eendaagse workshops tot onderzoekstrajecten die over meerdere jaren verspreid worden. Sommige programma's bieden specifieke vak kennis aan en andere focussen op nieuwe pedagogische ontwikkelingen, of een combinatie van zowel nieuwe vak kennis als nieuwe pedagogische inzichten. Soms richten DPP's zich op het verbeteren van de vaardigheden van individuele docenten, dan weer ligt de nadruk op samenwerkingsverbanden.

Hoewel bij veel onderzoek de nadruk ligt op de verbeterde vaardigheden van docenten, vinden we minder onderzoeksgegevens over het effect van deze verbeterde vaardigheden op de prestaties van studenten, en nog minder over de uiteindelijke bekliving van zo'n DPP. Hoewel leraren een DPP als zeer succesvol kunnen ervaren en menen dat hun zelfwerkzaamheid en vaardigheden bevorderd zijn, willen we uiteindelijk dat de DPP beter studentenresultaten opleveren, en dat voor een langere tijd dan de looptijd van een DPP.

Daarnaast is het voor onderzoekers en ontwerpers van DPP's belangrijk om te weten wat er voor zorgt dat docenten bereid zijn om hun manier van lesgeven te veranderen en elementen van een DPP op te nemen in hun dagelijkse onderwijspraktijk. Op basis van kennis over hoe docenten leren en wat hen motiveert om nieuwe ideeën toe te passen, kan er doelgerichter ontwikkeld worden.

Dit onderzoek belicht het volledige spectrum van docentenprofessionalisering, van de eerste stappen die gezet worden om de probleemoriëntatie, de probleemstelling en de onderzoeksvraag te definiëren, naar de ontwikkeling van interventiemethode en het in de praktijk uitvoeren van de interventie, met daaropvolgend het meten van de blijvende verandering van docentengedrag en onderwijspraktijk (beklijving).

We waren bijzonder geïnteresseerd de ervaringen van docenten die deelnamen aan een twee jaar durend DPP en deden onderzoek naar de effecten van het DPP op het gedrag van docenten. Waarom waren docenten gemotiveerd om aan dit langdurige traject deel te nemen? Was er sprake van intrinsieke of extrinsieke motivatie? Heeft deelname hun onderwijsvisie beïnvloed? Vanuit het onderzoek bestond een grote interesse in het antwoord

op de vragen of, hoe en waarom docenten onderdelen van het DPP gingen implementeren in hun eigen lespraktijk. Ook de vraag of docenten zich nu vaardiger voelden, wilden we graag beantwoord zien. We vroegen docenten welke programmaonderdelen zij het belangrijkste vonden en welke invloed deze onderdelen op hun onderwijsaanpak en -visie hadden. Al deze aspecten zijn belangrijk om te kunnen achterhalen hoe en in welke omstandigheden een wijziging in docentengedrag het best teweeggebracht wordt. Betere studentenprestaties zijn geen garantie voor een blijvende verandering in het gedrag en de manier van lesgeven van docenten. Indien docenten onzeker blijven over hun eigen presteren en kennis met betrekking tot nieuwe vak kennis of didactische ontwikkelingen, of als er meer voorbereidingstijd nodig is om nieuwe ideeën te implementeren en het aangeboden programma voldoet niet aan de verwachtingen, is de kans groot dat een docent teruggrijpt naar zijn traditionele aanpak. Het succes van een DPP zal van korte duur zijn als er geen rekening wordt gehouden met de behoeften van de docenten. In hoofdstuk 4 focussen we ons op de volgende onderzoeksvraag:

*Kunnen we professionele ontwikkeling bij docenten aantonen door ze te betrekken bij praktijkgericht onderzoek waarin ze een nieuw onderwijsontwerp implementeren en testen?*

Alle docenten die betrokken waren bij het implementeren en testen van het onderwijsprogramma werden na afloop van de testfase uitgenodigd voor een semigestructureerd interview. Tijdens de individuele interviews bestond de mogelijkheid voor docenten om uitvoerig in te gaan op hun persoonlijke opvattingen en ideeën omtrent het doceren van de aangeboden lesstof van het DPP, hun voormalige activiteiten met betrekking tot het onderwerp van het DPP, hun visie op het DPP en hun eigen ontwikkeling na deelname aan het programma. We waren geïnteresseerd in alle tekenen van docentenprofessionalisering.

Om de motivatie van docenten te meten om het aangeboden programma te gebruiken hanteerden we een methode afgeleid van de Perceived Locus of Causality (PLOC) van Ryan en Connell (1989). We noemen dit a-PLOC (geadapteerde PLOC-methode). Hiermee meten we verschillende vormen van motivatie meten die docentengedrag kunnen beïnvloeden, zoals beschreven in de Self-Determination Theory (SDT) van Ryan en Deci (2000).

De data uit de interviews toonde aan dat 70 % van de docenten onderdelen van het DPP tijdens hun lessen aan bod liet komen. De resultaten van de a-PLOC test gaven aan dat

de docenten intrinsiek en extrinsiek gemotiveerd waren om het DPP of de pedagogiek ervan in hun lessen te gebruiken.

In hoofdstuk 5 brachten we wederom een bezoek aan scholen die betrokken waren bij het DPP. We bezochten de scholen één jaar nadat het programma was afgerond, om te onderzoeken welke aspecten van het DPP programma nog steeds aanwezig waren in het lesprogramma van de betrokken docenten. Onze onderzoeksvraag was:

*Welk bewijs kunnen we aandragen dat aantoont dat docenten blijvend hun docentgedrag en het lesgeven in de praktijk hebben veranderd door toedoen van het DPP?*

We zochten naar signalen van verandering met betrekking tot het gedrag, opvattingen, intenties en handelen in de klas van docenten. Ook nu weer gebruikten we de reeds genoemde interviewmethode (uit hoofdstuk 4) met de focus op het huidige docentengedrag in de klas. We keken naar de contexten waarbinnen verandering had plaatsgevonden. Ook zochten we naar demotiverende aspecten die verandering tegenhielden en aanleiding waren voor docenten om geen wijziging in hun handelen op basis van het DPP door te voeren. We gebruikten wederom de a-PLOC methode (hoofdstuk vier) om eventuele intrinsieke en extrinsieke veranderingen van docentenmotivatie met betrekking tot het onderwijzen van de nieuwe lesstof uitspraakvaardigheid te meten. Verschillende aspecten van het DPP werden opgesomd in een questionnaire met de vraag aan docenten om aan te geven in welke mate de desbetreffende aspecten nog in hun lessen aanwezig waren. Ook een groep docenten die niet aan het DPP had deelgenomen kreeg dezelfde vragenlijst voorgelegd. Zo kon onderzocht worden of de docenten die deelgenomen hadden aan het DPP daadwerkelijk meer aandacht aan het doceren van de lesstof aangeboden in het DPP in hun lessen besteedden in vergelijking met de docenten die niet deelgenomen hadden. Ook de studenten van beide groepen docenten kregen een soortgelijke vragenlijst voorgelegd om te achterhalen of de perceptie van studenten overeenkwam met het gevoel van de docenten over het al dan niet aanbieden van bepaalde aspecten met betrekking tot het DPP. Uit de data van de docenten die deelnamen aan het DPP als ook uit de data van hun studenten, blijkt dat een jaar na afronding van het DPP er beduidend meer aspecten van het DPP aan bod komen in de les in vergelijking met de data van docenten (en hun studenten) die niet deelnamen aan het DPP. Van bepaalde aspecten is er dus sprake van aantoonbare beklijving.

In hoofdstuk 5 bestudeerden we verder de contexten die bijdroegen aan veranderd docentengedrag (Tiperley et al., 2007), maar we keken ook naar de oorzaken die ervoor zorgden dat docenten de nieuwe aanpak negeerden en vervielen in hun voormalige patronen. Onze onderzoeksvraag hierbij was:

*Welke condities dragen het meest bij aan docentenprofessionalisering en aan een blijvende verandering van docentengedrag in de klas?*

De resultaten bij deze onderzoeksvraag leidden tot een voorstel met betrekking tot een rangorde van belangrijke contexten waarbinnen docentenprofessionalisering plaatsvindt:

- 1: zorg voor een uitdaging die strookt met wat er op dat moment ook leeft binnen het onderwijs
- 2: zorg dat deze uitdaging ook aansluit bij de ontwikkelingen binnen de wetenschap en politiek
- 3: zorg dat de schoolleiding actief betrokken wordt
- 4: zorg dat de docent zich op de juiste manier betrokken voelt
- 5: zorg voor externe expertise
- 6: zorg voor voldoende tijd voor leermomenten
- 7: zorg voor professionele netwerken waarbinnen docenten kunnen samenwerken.

De probleemstelling die de verdere context van dit onderzoek bepaalde, werd gedefinieerd door de lerarenopleiding Engels van de Fontys Hogescholen te Sittard. Ieder jaar was de lerarenopleiding genoodzaakt om een cursus remedial pronunciation aan te bieden om eerstejaarsstudenten naar een acceptabel niveau met betrekking tot uitspraakvaardigheid Engels te leiden. Veel eerstejaarsstudenten zakten voor hun uitspraakvaardigheidstoets en worstelden met uitspraakfouten die typerend zijn voor Nederlanders die Engels spreken. In hoofdstuk 2 bezochten we scholen in het voortgezet onderwijs (VO) om te onderzoeken welke typische fouten in de uitspraak van de Engelse taal het meest gemaakt worden door leerlingen in het VO. Onze onderzoeksvraag was:

*Welke uitspraakfouten komen het meest voor in de Engelse uitspraak van leerlingen na twee jaar voortgezet onderwijs en na afronding van het voortgezet onderwijs in Nederland?*

We maakten opnamen van leerlingen uit 3vwo en 3tvwo (tweetalig, dus met versterkt

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programma Engels). Vervolgens werd dezelfde procedure gevolgd bij derdejaars bachelorstudenten afkomstig uit verschillende regio's in Nederland. Deze opnamen werden geanalyseerd en met elkaar vergeleken en daaruit ontstond een lijst met de zes meest voorkomende fouttypen in de Engelse uitspraak van de leerlingen en studenten (vanaf nu steeds onder de noemer 'studenten' weergegeven).

In hoofdstuk 3 wordt het proces van de ontwikkeling van een nieuw online onderwijsprogramma beschreven dat beoogt de Engelse uitspraak op het gebied van de zes gemeten meest voorkomende uitspraakfouten te verbeteren. Rekening houdend met mogelijke weerstand van docenten, leerlingen en schoolleiders tegen het gebruik van ICT-materialen in de klas, werd een eenvoudig te gebruiken website ontwikkeld met achtergrondinformatie voor docenten (fonetiek en fonologie) en voorbeeldvideo's voor leerlingen. Onze onderzoeksvraag was:

*Is er een verschil in het aantal uitspraakfouten in de Engels uitspraak van studenten in de geselecteerde fouttypen tussen de metingen van voor en na het gebruik van de interventiemethode?*

Docenten werden verzocht om volgens een strikte procedure de website te gebruiken en het volledige programma aan te bieden aan hun leerlingen tijdens de lessen Engels. Voorafgaande aan het inzetten van de website werd een pre-interventie toets afgenomen. Daarbij werden de leerlingen opgenomen terwijl ze een voor-gestructureerde Engelse tekst voorlezen. Deze opnamen werden geanalyseerd om te kijken hoeveel fouten per fouttype gemaakt werden. Een gelijkwaardige post-interventietoets volgde nadat het hele programma via de website aan de leerlingen was aangeboden. De post-interventie toets wees uit dat er significant minder fouten in vijf van de zes fouttypen geconstateerd werden.

In hoofdstuk 6 presenteren we een algemene conclusie op basis van alle onderzoeksresultaten. Er wordt nog eens ingegaan op de belangrijkste contexten waarbinnen docentenprofessionalisering plaatsvindt. We gaan ook nog eens dieper in op de demotiverende aspecten die ervoor zorgen dat beklijving en spreiding van nieuwe ideeën stagneert of zelfs verhinderd wordt. Ook bespreken we de tekortkomingen van dit onderzoek en de noodzaak voor verder onderzoek op het gebied van spreiding (scaling-up) en het monitoren van blijvende DPP-aspecten in het algemeen over een langere periode.

Although it seems impossible to thank all the people who have helped and guided me during this incredible journey, I am going to give it a fair try, in the hope that the people I forget to mention in black on white, forgive me, knowing that their help has been of great value to this research.

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# Appendices

## Appendix A:

# Explanation error types

### 1 Vowels too short

Dutch speakers of English (DSE) have the tendency to round off word endings which have a lenis consonant with a fortis sound, e.g. “pub” (b is p), “understand” (d is t), “is” (z is s) and, “have” (v is f). This influences the length of the preceding vowels in that the words become short and “sharp”. Some DSE also tend to not produce the right length for tense vowels and diphthongs, so words like “barn”, “so”, “mind” etc., end up being rather short and sometimes without much of a diphthong quality.

### 2 /e/ = /ɛ /æ/

This is the tendency to use the Dutch /ɛ/ as in “koffie zetten” for RP /e/. The jaw position is too close creating a “higher” sounding /e/-sound. Some Dutch speakers of English do the opposite. They open their jaw too much, making more of an /æ/ sound. They lose the distinction between /e/ and /æ/, so there is no difference between the pronunciation of e.g. “bad” and “bed” anymore.

### 3 /æ/ = /e/

This is the tendency to not make the distinction between /æ/ and /e/. Words like “understand”, “hand”, “can”, all have the /e/ quality. So again they do not make a distinction between words like “bad” and “bed” or “marry” and “merry”.

### 4 /ʌ/ = /ə/, /ɒ/, /ɪ/, /ɑ:/

This is the tendency of DSE to, whenever they see a [u] symbol, representing RP /ʌ/ in a word like “but” or “fun”, move the phoneme /ʌ/ towards a Dutch vowel quality /ɪ/ as in the Dutch word “kus” (kiss). When they see an [o] symbol, they tend to move towards the Dutch /ɔ/ as in the Dutch words “kom” (come), “bot” (bone), or towards RP

/ɑ/ as in “hot” and “not”. Some DSE turn /ʌ/ into /ɑ:/ opening their mouth (jaw position) too much, making the vowel in the word “but” sound more like the vowel in “bath” and “burn” sounds like “barn”.

### 5 /ɑ/ = Dutch /ɔ / or RP /ɑ:/, /ʌ/

The RP phonemes /ɒ:/ and /ɔ:/ are quite close to the AN phoneme /ɔ/. However, for the Dutch phoneme /ɔ/ the lips are rounded more. DSE who are aware of the difference between the RP phonemes and the Dutch one often fear rip-rounding and tend to spread their lips in order to make the difference between the RP sounds and the Dutch one distinguishable. With spread lips /ɒ/ often ends up sounding like /ɑ:/ or /ʌ/ so that “hot” might end up sounding like “heart” and “not” like “nut”.

### 6 /ʊ/, /ɑ:/ == Dutch /u/ [œ]

The Dutch phoneme /u/ differs from RP /u:/ in that in the jaw position the Dutch sound is more close, creating a “higher” /u:/ quality. So the Dutch vowel in the word “boek” (book) does not sound like the English vowel in the word “boot”. Furthermore many DSE produce RP /u:/ and /ʊ/ alike, making no distinction between the vowels in the words “book” and “boot” or “stood” and “stew”.

### 7 /aʊ/ = /aw/, /ɔʊ/

Especially Dutch speakers who use an AN (Algemeen Nederlands = Standard Dutch) accent or one close to it. have a tendency to round their lips too much at the beginning and the end of /aʊ/ when speaking English, so that the starting point of the diphthong is more like /ɔ/ instead of /ɑ:/ and the end more like a /w/. This because of the Dutch phoneme /ɔʊ/ in a word like “nou” (now) is close to RP /aʊ/ in a word like “now”, but more rounded from the start of the first element of the diphthong and closer in jaw position, and more rounded, at the end of the second element of the diphthong.

### 8 /əʊ/ == /o:/, /ɔ:/

Some DSE deal with the [o] symbol as if it were the Dutch [oo] in a word like “kook” (cook), ignoring the diphthong quality in words with RP /əʊ/ (“so”, “no”, “go” and “over”), giving these words a heavy Dutch accent.



error types
<b>Vowels</b>
vowels too short
e = ɛ /æ
æ = e
ʌ = ə / ɒ / ɪ / ɑ:
ɒ = ɔ: / ɑ: / ʌ
ʊ / u: oe
<b>Diphthongs</b>
aʊ = aw / ɔʊ
əʊ, o: / ɔ:
eɪ = e: / aɪ
aɪ = aɪ / ɔj
RP /ɑ:/ is GA /æ/
<b>consonants</b>
r -colouring
finals lenis = fortis
ð = d
θ = t,f,s
v = f
no aspiration /p t k/
<b>contact</b>
no linking -r
no gradation
no liaison



### 9 /eɪ/ = /e:/, /aɪ/

Some DSE tend to forget about the second element of the diphthong /eɪ/ so that the phoneme ends up sounding like an elongated Dutch [ee] as in the Dutch word “week” (week). So RP “wake” sounds like AN “week”. A few DSE might have adopted some sort of local British pronunciation of /eɪ/, opening the jaw too much for the first element of the diphthong and making RP “day” and “die” sound more or less alike.

### 10 /aɪ/ = /aj/, /ɔj/

Because the rounding off of the Dutch diphthong /eɪ/ as in the Dutch word “ijs” (ice), which happens with the jaw moving toward a very “close” position, creating a very “high” /i:/ quality and a /j/ -like ending, some DSE copy these features while pronouncing RP /aɪ/ so the ending is too Dutch in quality. Some even add lip-rounding to the first element, causing a word like “buy” to sound more like “boy” with a Dutch /i+j/ ending.

### 11 RP /ɑ:/ is GA /æ/

Some DSE are not aware of typical Americanisms in their RP pronunciation. Using words like dance and chance, pronounced as /dɑ:nts/ and /tʃɑ:nts/ in the same sentence with words like “can’t” and “enhance” pronounced as /kænt/ and /ɪnhæns/, causes inconsistency. Creating awareness of certain characteristics of the various generally accepted accents (in this case RP and GA) might take away these inconsistencies.

### 12 R –colouring

Many DSE have a tendency to pronounce an /ɜ:r/ (as in “earn”) quality in words like “word”, “heard”, “car” and “computer” because they detect a visual ‘r’ in the coda of a word.. Sometimes it is an American “r” we hear or something close to it. The tip of the tongue curls back a bit instead of keeping the tongue flat in order to lengthen the preceding vowel quality. Every movement towards the r is off in RP. In a word like “floor” a student should produce a longer vowel quality (/flo:/) and avoid curling the tip of the tongue so an r-quality is produced because we see an r on paper which would be pronounced in the coda of a Dutch word like “vloer” (floor) or “kaart” (map, card).

### 13 Finals lenis = fortis

Many DSE round off words ending in a lenis sound (pub, understand, is, and, gave, have, as, understand, has, with, girls, boys etc.) with a fortis sound. This also influences the length of the preceding vowels or voiced portions. It is important to be conscious of

the difficulties when the following word starts with a voiceless phoneme, as assimilation (e.g. have + to or these+ships) causes lenis endings to become fortis (/hæv/ + /tu:/ becomes /hæftə/ and /ði:z/ + /ʃɪps/ becomes /ði:ʃɪps/) in fluent speech. However, if the DSE decides to pause in between two of those words, they should clearly produce the lenis sound.

### 14 /ð/ = /d/

The vast majority of Dutch students speaking English does not distinguish between /ð/ and /d/. most of them are not even able to produce the correct version of /ð/. Physical explanation is necessary! What happens in the mouth? Where to stick your tongue etc. As there are so many easy grammatical words in almost every sentence (the, that, this, those, there etc.) it is important to improve a student’s awareness of the clear distinction between “that” and “dad”, “other” and “udder” and the English word “mother” should not sound like the Dutch word “modder” (mud).

### 15 /θ/ = /t/, /s/, /f/

The vast majority of DSE does not distinguish between /θ/ and /t/, /s/ or /f/. Most of them are not even able to produce the correct version of /θ/. Physical explanation is necessary! What happens in the mouth? Where to stick your tongue etc. Making sure a student can distinguish between the bold and underlined sounds in words like

“face” /feɪs/ and “faith” /feɪθ,  
 “team” /ti:m/ and “theme” /θi:m/  
 “free” /fri:/ and “three” /θri:/

is very important in order to improve an RP accent.

### 16 /v/ = /f/

Some DSE tend to turn a final lenis /v/ into a fortis /f/ in words like “have”, “gave”, “of” etc. and sometimes even initial /v/ turns into a fortis /f/ in words like “very” (sounding like “ferry”) or “vast” (sounding like “fast”). This happens because of the way the Dutch initial v in writing, especially in AN, is pronounced like the voiceless f (“veel vaker” sounding like [feel faker].and a final v in Dutch words does not even exist. Seeing an f on paper in Dutch words, is automatically an f in pronunciation, but in RP an f in the word “of” on paper is a v in pronunciation. When final v turns into f it automatically shortens the preceding vowel or voiced portion.

### 17 no aspiration after initial /p/,/t/,/k/

This is something most DSE are not aware of. After initial /p,t,k,/ they immediately voice the following vowel. Adding the extra puff of air after initial /p/,/t/,/k/ (or as some linguists put it: delay the voicing of the vowel after initial fortis plosives) increases the RP –quality of pronunciation. It is not only word initial /p/,/t/,/k/, but also syllable initial. So in a word like “potato” every fortis plosive needs aspiration.

### 18 No linking - r

Some DSE who are aware of the fact that in RP the r in the coda of a word should not be pronounced, tend to keep this up when linking - r is needed. DSE who do pronounce the r in the coda of a word, often produce linking - r without realising it. However, when they produce a pause in between the two words which should be linked with linking r, and the first one ends with a clear r in pronunciation, but they do not really link the two words, it is still considered to be off.

### 19 no gradation

DSE are not aware of some words having a strong and a weak form. They aren't even aware of it being present in their mother tongue, but use it automatically. When not using it in the L2, they will sound too formal. Even if they read “he is” they should pronounce “he's” and “of” is almost always pronounced /əv/ instead of the strong form /ɒv/.

### 20 no liaison

When a word ends with a consonant and the next one starts with a vowel, DSEs tend to put in a glottal stop right before pronouncing the word starting with a vowel, instead of connecting the words as if the last consonant is the first consonant of the word starting with a vowel. So instead of “uncle Eric” pronounced as /ʌŋkəlɛrɪk/ it will sound like /ʌŋkəl ʔerɪk/, which is the typical Dutch way of pronouncing words starting with a vowel in Dutch ( hij ʔeet ʔeen ʔappel). Every word starting with a vowel, not linked to the preceding word as if the final consonant of the preceding word is the first of the word starting with a vowel, and every time the glottal stop is heard before the initial vowel, is considered to be off in this research.

## Appendix B:

## Evaluation format

Oral Communication Evaluation Form									
UV - ...	Name:	Date:	U =	V =	Evaluators:				
Pronunciation		Topic		Fluency					
Error Type	Notes			Area	-	±	+	Notes	
<b>Vowels:</b> X				vocabulary					
vowel too short				syntax					
(+ final fortis)				initiative					
i = i:				strategy					
e = æ / ɛ				confidence					
æ = e				subject grasp					
ʌ = ɔ / ɒ / ʏ				clarity of comm.					
ɑ: = ɔ:				sophistication					
ɒ = ɔ: / ɑ: / ʌ				...					
ɔ: = ʌ:									
u / ʊ: = ɔe				question-tags missing					
incorr./no lipr.				hesitations					
i = too open /e/				stopgaps					
				...					
<b>Diphthongs:</b> X									
əʊ = ɔ: / ɔ:									
au = aʊ / ɔu									
eɪ = e: / aɪ									
aɪ = aɪ / ɔɪ									
ɔɪ = ɔɪ									
e = e:									
<b>Consonants:</b> X									
r-colouring									
final lenis = fortis									
lenis cs. = fortis									
fortis cs. = lenis									
clear /l/ = dark									
dark /l/ = clear									
ð = d									
θ = t									
v = f									
r = rounded									
w = no lipr. / v									
/ə / - insertion									
no aspir. / p t k /									
...									
<b>Contact/Misc:</b> X									
no linking-r									
no gradation									
no liaison									
incorr./no assim.									
incorr. word acc.									
articulation									
(dutch) intonation									

## Appendix C:

# Observation protocol

### Observation Protocol:

Type of mistake and the number of types any one student could make that mistake in the first two tasks; column 3 was used to list the total number of mistakes a specific student made for a particular error type; column 4 was used to calculate the number of mistakes made relative to the total number of mistakes any individual student could possibly make for a particular error type; the relative frequency is expressed as a percentage.

error types	possible mistakes	mistakes reading	percentage
vowels too short	92		
e = ε/æ	41		
æ = e	19		
ʌ = ə/ ɒ / ɣ	30		
ɒ = ɔ: / ɑ: / ʌ	15		
ʊ / u: = œ	22		
aʊ = aʊ / ɔʊ	20		
əʊ = o: / ɔ:	27		
eɪ = e: / aɪ	23		
aɪ = aɪ / ɔj	22		
RP /ɑ:/ is GA /æ/	17		
r -colouring	53		
final lenis = fortis	100		
ð = d	58		
θ = t,s,f	10		
v = f	18		
no aspiration /p t k/	50		
no linking -r	11		
no gradation	85		
no liaison	66		
Sum total	779		

## Appendix D: Assignment 1 and 2

# Assignments research pronunciation

13 September 2013

Institution x3, the Netherlands

## Introduction

Dear student,

Today you will be working on 2 assignments which you have to record in English. The recordings will be used in a research on pronunciation skills in secondary education.

In assignment 1 you have to read 13 sentences aloud.

In assignment 2 you have to read the text “Arthur the rat” aloud.

You are allowed to read through the tasks before you start the recording. As soon as you start recording you are not allowed to stop in between the assignments.

When ready you can send your recording to (Email author).

## Instructions

Start the recording and answer questions 1 to 5 first.

1. What is your name?
2. Which form are you in?
3. How old are you?
4. What is your mother tongue?
5. What is your nationality?

Continue with the two assignments which you will find on the next page.

## Assignment 1

Read the following sentences aloud:

1. They never think about anything that the author throws at them in these books.
2. Read those great romantic novels about cars and motorbikes produced in the Far East.
3. The kids skipped classes, took some cash from mother's purse and bought ten computer games.
4. Is aunt Ellen as old as uncle Eric?
5. She bought a pup and went to meet some friends in the pub whom she bored with her talks about dogs.
6. You should never put your books in the wet boot of a car.
7. But it's stunning to see him run like a bunny.
8. Taking a bath before going to a dance enhances your chances of getting a date.
9. I can't understand that those married people set a bad example.
10. Bending the rules never leads to better results, said Freddy.
11. I embrace their ideas but don't see how such a load of work can be done in a year.
12. The Hulk lost his temper and lifted a lorry with his left hand.
13. He has never been to France and would like to go there as soon as possible.

(continue with assignment 2 on the next page)

## Assignment 2

Read the following text aloud:

### *Arthur the rat.*

*Once there was a young rat named Arthur, who could never make up his mind. Whenever his friends asked him if he would like to go out with them, he would only answer, "I don't know." He wouldn't say "yes" or "no" either. He would always shirk making a choice. His aunt Helen said to him, "Now look here. No one is going to care for you if you carry on like this. You have no more mind than a blade of grass."*

*One rainy day, the rats heard a great noise in the loft. The pine rafters were all rotten, so that the barn was rather unsafe. At last the joists gave way and fell to the ground. The walls shook and all the rats' hair stood on end with fear and horror. "This won't do," said the captain. "I'll send out scouts to search for a new home."*

*Within five hours the ten scouts came back and said, "We found a stone house where there is room and board for us all. There is a kindly horse named Nelly, a cow, a calf, and a garden with an elm tree." The rats crawled out of their little houses and stood on the floor in a long line. Just then the old one saw Arthur. "Stop," he ordered coarsely. "You are coming, of course?" "I'm not certain," said Arthur, undaunted. "The roof may not come down yet." "Well," said the angry old rat, "we can't wait for you to join us. Right about face. March!"*

*Arthur stood and watched them hurry away. "I think I'll go tomorrow," he calmly said to himself, but then again "I don't know; it's so nice and snug here."*

*That night there was a big crash. In the morning some men—with some boys and girls—rode up and looked at the barn. One of them moved a board and he saw a young rat, quite dead, half in and half out of his hole. Thus the shirker got his due.*

You can stop the recording now and send your sound file to:  
(email address author)  
Thank you for your participation!

## Appendix E:

# Simplified version of the computer-assisted pronunciation teaching tool as used by the Fontys Minor course English language and Culture.

## *Do You Sound English?*

### Pronunciation Course By Frans Hermans

Portfolio	Onderwerp
Opdracht 1	Aspiratie
Opdracht 2	Aspiratie
Opdracht 3	Aspiratie
Opdracht 4	Engelse 'r'
Opdracht 5	Engelse 'r'
Opdracht 6	Aspiratie
Opdracht 7	Engelse 'r' / Linking 'r'
Opdracht 8	Th-klank
Opdracht 9	Th-klank
Opdracht 10	stemloze th-klank
Opdracht 11	stemhebbende th-klank
Opdracht 12	kaakbeweging in woorden
Opdracht 13	korte klinker e
Opdracht 14	so /səʊ/
Opdracht 15	Engelse æ
Opdracht 16	/əʊ/ -klank (no)

## 1 Inleiding

### 1.1 Welk accent heb jij?

Spreek jij al een beetje Engels? Heb jij wel eens nagedacht over jouw uitspraak van de Engelse taal? Weet jij welk Engels accent jij gebruikt? Klinkt jouw Engels accent Amerikaans, Brits of klink je nog heel erg Nederlands als je Engels spreekt? Of is het misschien van alles wat? Spreek jij misschien een andere taal dan Nederlands als moedertaal en beïnvloedt die taal je uitspraak? Wil jij niet alleen Engels spreken maar ook Engels klinken? Dan kan deze module je daarbij helpen.

In deze module gaan we het hebben over de uitspraak van de Engelse taal. Op veel scholen wordt voldoende aandacht besteed aan lezen, schrijven, spreken en luisteren, maar soms is er wat weinig tijd en aandacht voor het oefenen van de juiste uitspraak. Je kunt dan wel goede zinnen formuleren, maar door een verkeerde uitspraak klinkt het dan niet echt Engels. Maakt dat dan iets uit? Is het niet belangrijker dat men je begrijpt? Natuurlijk is het belangrijk dat men je begrijpt. Het komt echter vaak voor dat men je verkeerd begrijpt of minder serieus neemt als je accent teveel afwijkt van de algemeen erkende Engelse accenten

### 1.2 Fonetiek: de leer van de klanken

De leer van de klanken van een taal heet met een moeilijk woord "fonetiek". De klanken van RP zijn op internationaal niveau in de fonetiek vastgelegd. Iedere klank heeft zijn eigen symbool gekregen. Elke klank die in het standaard Engelse accent (RP) gemaakt kan worden, heeft dus een eigen symbool. Deze verzameling van symbolen heet International Phonetic Alphabet (IPA) en in het Nederlands vertaald is dat het Internationaal Fonetisch Alfabet. We zullen in deze module kennis maken met een paar van deze symbolen. Als je weet welke klank bij welk symbool hoort, dan weet je automatisch hoe een woord uitgesproken moet worden. Woordenboeken Engels geven meestal het woord ook nog eens weer in het fonetisch schrift. Kijk maar een naar het volgende voorbeeld in figuur 1. Fonetisch schrift voor een woord in een Engels woordenboek



Figuur 1: Fonetisch schrift in een woordenboek.

Bij de blauwe pijl zie je het woord phonetics geschreven met de IPA-symbolen. Waar je ook ter wereld Engels leert, als je de klanken bij de symbolen kent, weet je altijd hoe je een woord moet uitspreken.

### 1.3 IPA-symbolen

In figuur 2 zie je alle symbolen die de bestaande klanken van RP weergeven. De symbolen staan voor de klanken van het onderstreepte deel in het gegeven woord. In deze module zul je de symbolen met een blauwe pijltje erbij tegenkomen. Mocht je de symbolen willen leren, dan kun je dit schema gebruiken. Voor deze module is het echter niet nodig om deze symbolen uit je hoofd te leren. IPA symbolen voor bestaande klanken van received pronunciation.

I: READ	I SIT	ʊ BOOK	u: TOO	Iə HERE	eɪ DAY	John & Sarah Free Materials 1996	
e MEN	ə AMERICA	ɜ: WORD	ɔ: SORT	ʊə TOUR	ɔɪ BOY	əʊ GO	
æ CAT	ʌ BUT	ɑ: PART	ɒ NOT	eə WEAR	aɪ MY	aʊ HOW	
p FIG	b BED	t TIME	d DO	tʃ CHURCH	dʒ JUDGE	k KILO	g GO
f FIVE	v VERY	θ THINK	ð THE	s SIX	z ZOO	ʃ SHORT	ʒ CASUAL
m MILK	n NO	ŋ SING	h HELLO	l LIVE	r READ	w WINDOW	j YES

Figuur 2: IPA-symbolen voor received pronunciation, diagram volgens John and Sara Free Materials, 1999

## 2 Aspiratie en de Engelse 'r'

### 2.1 p, t, k en iets extra's

De Engelse medeklinkers p, t en k klinken bijna hetzelfde als de Nederlandse medeklinkers p, t en k. Toch krijgen deze Engelse medeklinkers iets extra's als ze aan het begin van een woord of een lettergreep in een woord staan. In het Nederlands gebeurt dit niet. Let wel op dat het hier gaat over de klank die je hoort en niet de letter die je leest op papier. Zo lees je een c in het woord occur, maar je hoort een k. Het gaat dus bij de woorden in deze oefeningen en uitleg altijd om wat je hoort als je de woorden uitspreekt.

#### Oefening 1

In de volgende video hoor je telkens twee Engelse woorden uitgesproken. De eerste keer wordt het met een Engels accent uitgesproken en de tweede keer met een Nederlands accent. Probeer te ontdekken welk verschil je hoort en let daarbij vooral wat gebeurt na het uitspreken van de p, t of k. Bijvoorbeeld: je hoort het woord park twee keer. Wat gebeurt er de eerste keer na de p van park en wat gebeurt er niet bij de tweede keer als het woord met een Nederlands accent wordt uitgesproken. Probeer dit te ontdekken bij alle uitgesproken woorden, daar waar een woord of een lettergreep begint met een p, t of k (onderstreept en vetgedrukt).

De uitgesproken woorden in de video zijn:

- |               |                     |                   |
|---------------|---------------------|-------------------|
| 1 <b>park</b> | 6 <b>attack</b>     | 11 <b>Peter</b>   |
| 2 <b>car</b>  | 7 <b>apart</b>      | 12 <b>party</b>   |
| 3 <b>tea</b>  | 8 <b>occur</b>      | 13 <b>kitten</b>  |
| 4 <b>pot</b>  | 9 <b>impossible</b> | 14 <b>totally</b> |
| 5 <b>kiss</b> | 10 <b>arcade</b>    | 15 <b>potato</b>  |

### 2.2 Wat is aspiratie?

Wat heb je in de vorige video ontdekt? Als je goed geluisterd hebt, hoor je dat bij de Engelse uitspraak extra "lucht" achter de p, t of k geproduceerd wordt, zodat de klinker die volgt, iets later begint dan bij de woorden die uitgesproken worden met een



Nederlandse accent. Als je dit niet ontdekt had, kijk en luister dan nu nog eens naar de video. Hoor je het nu wel?

Als we die extra “lucht” weergeven met “hh”, dan spreek je park dus uit als “phhark” en potato als “phhothhathho”. Deze extra “lucht” noemen we met een lastig woord “ASPIRATIE” (in het Engels “ASPIRATION”). In de volgende video wordt met de woorden park en potato nog eens op een overdreven manier aangegeven wat er nu eigenlijk achter de letters p, t en k gebeurt in het Engels.

*Video: wat gebeurt na p, t en k.*

## 2.3 Wanneer wel p, t, of k maar geen aspiratie?

In de volgende video worden deze woordparen uitgesproken:

cool – school

cat – spat

peak – speak

pin – spin

talk – stalk

tool – stool

### Oefening 2

In welke woorden verwacht je aspiratie? Schrijf deze woorden eerst op. Luister dan goed naar de video en schrijf op bij welke woorden jij aspiratie hoort.

*Video: wanneer geen aspiratie bij p, t en k*

Wat heb je ontdekt? Als je goed geluisterd hebt, hoor je dat de woorden in het tweede rijtje geen aspiratie na p, t of k krijgen. Aspiratie komt voor als een p, t of k alleen aan het begin van een woord of lettergreep staat en niet in combinatie met een s die voor de p, t of k staat. Dus in het woord cool staat de k (want de c klinkt als een k) alleen, dus krijg je aspiratie. In het woord school staat de k (want je spreekt de c weer uit al een k) in combinatie met s (en de h, maar die spreek je niet uit) en daarom krijg je nu geen aspiratie achter de k-klank, maar spreek je meteen de klinker [oo] uit zonder eerst extra lucht (aspiratie) te produceren. Hierna volgen nog 2 voorbeelden:

### Voorbeeld 1:

Hoe zit dat dan met een woord als aspect? Waar verwacht je aspiratie? Je kijkt dan natuurlijk of er een p, t of k in het woord voorkomt die aan het begin van een lettergreep staat. In het woord staat dus één p. Staat die aan het begin van een lettergreep? Het woord heeft 2 lettergrepen: as-pect. De tweede lettergreep begint met een p en daarom volgt hier wel aspiratie.

### Voorbeeld 2:

Het woord inspire heeft twee lettergrepen: in-spire. De tweede lettergreep heeft wel een p, maar deze staat in combinatie met een s, dus volgt er geen aspiratie.

## 2.4 Aspiratie opdrachten

### Opdracht 1

Leg uit en schrijf op waarom jij na de onderstreepte medeklinkers in de onderstaande woorden wel of geen aspiratie verwacht.

1 prayer	6 upstairs	11 tomato
2 totally	7 eskimo	12 bingo
3 start	8 appose	13 gate
4 carry	9 please	14 explain
5 car door	10 perfect	15 timetable

### Opdracht 2

Kijk daarna of je buurman of -vrouw tot de zelfde conclusies is gekomen. Als er verschillen zijn, moeten jullie samen tot één conclusie komen. Leg dus uit waarom jij vindt dat er wel of geen aspiratie moet komen en luister dan naar de uitleg van de ander. Als je denkt dat de ander gelijk heeft, pas je je eigen antwoord aan.

### Opdracht 3

Maak een opname terwijl je bovenstaande woorden voorleest. Let daarbij op het juiste gebruik van aspiratie. Laat je opname horen aan je buurman/-vrouw en beoordeel of hij/zij op de juiste manier aspiratie heeft gebruikt. Je buurman/vrouw luistert op de zelfde manier naar jouw opname. Vergelijk jullie opnamen om te kijken of jullie op de zelfde plaatsen aspiratie hebben gebruikt.

## 2.5 De Engelse r

### Trilling

De Engelse r is voor Nederlanders een moeilijke klank om uit te spreken. Dit heeft verschillende oorzaken. De Nederlandse r wordt op een hele andere manier uitgesproken. Wat er in je mond gebeurt als je de Nederlandse r uitspreekt, is niet te vergelijken met wat er in je mond gebeurt bij de uitspraak van de Engelse r. De meeste Nederlanders maken de r door in je mond een tril-beweging te maken. Dit kan gebeuren door een trilling met je tongpunt richting je gehemelte, of een trilling dieper in je keel. Kijk en luister maar eens naar de video. Je hoort eerst Nederlands r de r uitgesproken met een tongpuntrilling en daarna met een trilling dieper in de keel.

Belangrijk om te onthouden is dat in RP-Engels in ieder geval geen trilling gemaakt wordt. Als je moeite hebt met het maken van de Engelse r, dan zou je kunnen beginnen met de klank z aan te houden (zzzzzzzz) en dan je tongpunt verder naar achteren te krullen totdat de z-klank verdwenen is. Kijk en luister maar eens naar de volgende video.

### Oefening 1

Probeer het nu eens zelf. Begin bij z en krul je toch richting je harde gehemelte. Zodra de z –klank verdwenen is en je de juiste r klank hoort, zeg je “ight” (spreek uit als “ait”) erachter. Je spreekt dan het Engelse woord right uit. Neem het woord twee keer op terwijl je begint met de z, maar daarna ook 3 keer terwijl je meteen met de r begint. Vergelijk jouw uitspraak met die van de onderstaande video. Doe je het goed?

## 2.6 W of R?

Sommige Nederlanders vinden het moeilijk om het verschil tussen een Engelse w en r te laten horen aan het begin van een woord. Het Engelse woord white klinkt dan het zelfde als het Engelse woord right.

### Oefening 2

Maak maar eens een opname van jouw uitspraak van de volgende woordparen:

- 1 white - right
- 2 weed - read
- 3 wed - red

4 wim - rim

5 where - rare

Hoor je een duidelijk verschil? Hoe maak je het verschil tussen de Engelse w en de r? kijk eens naar de volgende foto's. Foto 1 toont de positie van de lippen bij het maken van de Engelse r en foto 2 toon de positie van de lippen bij het maken van de Engelse w. Welk verschil zie je?



Foto 1: Vorm van de lippen bij uitspreken “r”

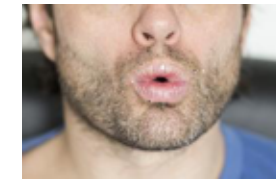


Foto 2: Vorm van de lippen bij uitspreken “w”

Als je goed kijkt, zie je dat de lippen bij het maken van de r minder gerond zijn dan bij het maken van de w. Als jouw Engelse r bij het uitspreken van de bovenstaande woordparen het zelfde klinkt als de Engelse w, moet je proberen om de lippen bij het uitspreken van de Engelse r wat minder te ronden. Als je de lippen te rond maakt, hoor je automatisch een w.

Ook het puntje van je tong maakt een andere beweging bij het uitspreken van een w of een r. Bij de w voel je het puntje van je tong bijna of helemaal tegen je tandkassen in de onderkaak duwen. Je laat het voorste gedeelte van je tong eigenlijk een beetje lui in je onderkaak liggen en alleen het achterste gedeelte komt wat omhoog. Bij het maken van de r krult het puntje van je tong eerst net de andere kant op, richting je gehemelte en beweegt vervolgens weer naar voren, alsof het de lucht je mond uit wilt gooien met een werpbeweging.

### Oefening 3

Neem de woordparen nogmaals op en zorg dat je het verschil goed hoort.

1. white - right
2. weed - read
3. wed - red
4. wim - rim
5. where – rare

## 2.7 Wel of geen r uitspreken

Als je in het Nederlands een r in de spelling van een woord ziet staan, dan spreek je deze r ook uit. Dit is echter niet het geval in het Engels met een RP-accent. Je spreekt de r in het Engels alleen uit als deze gevolgd wordt door een klinker en dus niet aan het einde van een woord of lettergreep als er geen klinker meer volgt. Kijk maar eens naar de volgende woorden.

De r wordt gevolgd door een klinker, dus uitspreken:

1. read
2. spring
3. produce
4. dora
5. worry

De r wordt niet gevolgd door een klinker, dus niet uitspreken:

1. car [ca]
2. door [doo]
3. other [othe]
4. apart [apat]
5. colours [colous]

## 2.8 Linking r

We hebben net geleerd dat je de r aan het einde van een woord of lettergreep niet uitsprekt. Als je echter deze woorden gebruikt in zinnen, dan is er één uitzondering op die regel en dat is de volgende:

Wanneer er een woord in een zin staat dat eindigt op een r, die je normaalgesproken niet zou uitspreken, maar het volgende woord begint met een klinker-klank, dan moet je de r wel uitspreken. In principe spreek je de r dus altijd uit als er een klinker volgt, ook al is deze klinker van het volgende woord!

### Voorbeeld 1:

He lives in the Far West.

In deze zin eindigt het woord Far op een r, die je niet uitsprekt, en het woord West begint met een medeklinker. Je spreekt de r van Far dus niet uit.

### Voorbeeld 2:

He lives in the Far East

In deze zin eindigt het woord Far op een r die je normaalgesproken niet uitsprekt. Echter, het woord East begint met een klinker-klank. Je moet nu de r van Far wel uitspreken om zo de twee woorden vloeiend achter elkaar te kunnen uitspreken, zonder onnatuurlijke pauze tussen de woorden in. Je linkt dus het woord Far aan East door de r uit te spreken.

### Voorbeeld 3:

That's my car

In deze zin staat de r van car achteraan in een woord aan het einde van de zin en wordt niet gevolgd door een woord dat begint met een klinker-klank. De r wordt dus niet uitgesproken.

### Voorbeeld 4:

Do you know where my car is?

In deze zin wordt de r in het woord car gevolgd door een woord dat begint met een klinker-klank (i van is). Nu moet je de woorden car en is aan elkaar “linken” door de r wel uit te spreken. De r die je normalerwijs dus niet moet uitspreken, maar die je wel uitsprekt als er een woord volgt dat begint met een klinker-klank, noemen we met een moeilijke term “Linking r”. Deze r “linkt” woorden die eindigen op r en woorden die beginnen met een klinker-klank, aan elkaar.

### Oefening 4

In de onderstaande video worden de voorbeeldzinnen uitgesproken. Let goed op het wel of niet uitspreken van de r.

He lives in the Far West. (geen r)

He lives in the Far East (wel r)

That's my car (geen r)

Do you know where my car is? (wel r)

*Video: woorden met of zonder r in zinnen*

## 2.9 Opdrachten Engelse R

### Opdracht 3

Lees de volgende woorden. Denk na over welke r je wel en niet gaat uitspreken. Streep elke r door die je niet hoeft uit te spreken. Kijk daarna of je buurman of –vrouw de zelfde keuzes gemaakt heeft. Bespreek de verschillen en zorg dat jullie allebei aan het einde de zelfde keuzes gemaakt hebben.

1 Peter	6 mother	11 thunder
2 ready	7 green	12 alright
3 airport	8 extra	13 cream
4 garage	9 door step	14 killer
5 pretty	10 drama	15 born

### Opdracht 4

Maak nu een opname terwijl je de woorden hardop voorleest. Let natuurlijk op het wel of niet uitspreken van de r.

### Opdracht 5

Kijk nu of jouw uitspraak gelijk is aan die van de uitspraak in de onderstaande video.

*Video: wel of geen*

### Opdracht 6 Aspiratie

Print (of kopieer naar een WORD-bestand) het onderstaande stukje tekst met de titel A friend in need en onderstreep waar jij aspiratie verwacht. Bereid daarna het stukje tekst nu goed voor zodat je het met een juiste uitspraak goed kunt voorlezen. Let daarbij vooral op de woorden met aspiratie. Maak een paar opnamen terwijl je de tekst leest en zodra je tevreden bent met het resultaat, stuur je de opname naar je docent. In de klas bespreken jullie de opnamen en je docent zal beoordelen of je gebruik van aspiratie voldoende is.

A friend in need.

Pauline met Tim in Portugal in 2010 (two thousand and ten). They became good friends in just two weeks' time. The first day they met Tim had had a motor accident and Pauline found him, faced down in the mud, in a narrow backstreet, with nobody else around to help. Pauline rushed to the nearest shop and asked for help. When the ambulance arrived Pauline was asked to sit next to Tim in the Ambulance during the ride to the nearest hospital. For two weeks Tim had to fight for his life in hospital. He was in a coma and the doctors thought he might not get out of it. When he finally awoke after 14 (fourteen) days, Pauline was the first person he saw. Although Tim had never laid eyes on Pauline, he was familiar with her voice, as Pauline had spent her holidays in hospital, talking and reading to Tim every single day. Tim had heard everything but had not been able to move or speak at all. This stranger speaking to him for two weeks had proven herself to be a good friend in need and Tim knew that he had found a friend for life too. In 2012 (two thousand and twelve) Tim, fully recovered from his injuries now, asked Pauline to go with him on a holiday in Portugal again to make up for lost time in 2010 (two thousand and ten). They had a wonderful time and this time Tim did not bring his motorbike. They had such a great time together that they decided to go on holiday together every year, but not as just friends, but as husband and wife. Pauline is the author of the three hundred paged novel titled Thriving love with eyes closed. Tim is thinking about writing a book on the importance of a healthy lifestyle, as his recovery from his injuries, and all the health issues surrounding that process, made him realise how important your health really is.

### Opdracht 7 (de Engelse “r” en “linking-r”).

Print of Kopieer onderstaande tekst met de titel Arthur's car naar een “WORD” bestand. Lees dan de tekst goed door en zet een streep door iedere r die je niet uitspreekt en onderstreep de woorden die je met een linking r aan elkaar moet koppelen. Bereid daarna deze tekst goed voor. Zorg dat je de r op de juiste manier (wel of niet) uitspreekt. Zodra je tevreden bent over je eigen uitspraak moet je de opname aan je docent sturen. Je docent beoordeelt of je uitspraak voldoende is.

Arthur's cars.

Arthur always bought cheap cars. Sometimes he needed to buy three cars a year because his cars tended to break down after a few months. His wife was always very angry when another car broke down. Especially when she had been driving it and she had to call a taxi to get to where she had to go. Whenever she complained about Arthur having to buy another car, she would hear the same excuses over and over again. Arthur would tell her that buying three cars for about three hundred pounds per car is still cheaper than buying a new or younger car, and it's fun to drive a different car every few months. It made him feel like a rich man, driving another car each time.

One day Arthur's wife told him that she was thinking of leaving him. Arthur was shocked and could not believe his ears. "Why on earth do you want to leave me?" he cried. His wife said; "Well, I think that maybe it's wise not to be married to one man, but to date two to three men a year. It is more expensive to live with a husband in a big house than living in a small apartment, dating a new man every three or four months, who would buy me dinner and presents. And it might be fun to have a new friend every few months. It would feel like falling in love anew every single time". Arthur looked at his wife in astonishment, rushed out of the door, ran to the nearest car dealer and bought a brand new car to never sell again.

## 3 De stemloze th-klank

### 3.1 th-klanken

Als je in het Engels de combinatie van de letters th leest, dan kan deze combinatie op drie manieren uitgesproken worden:

1. Stemloze th-klank zoals in de Engelse woorden "think", "Arthur", en "bath".  
*Video: stemloze th-klank*
2. Stemhebbende th-klank zoals in de Engelse woorden "the", "mother" en "breathe".  
*Video: stemhebbende th-klank*
3. Th-klank die wordt uitgesproken als een "t" zoals in de Engelse woorden "Thomas", "Thailand" en "Thames".  
*Video: th klinkt als t*

### 3.2 De stemloze th-klank

We beginnen met wat uitleg over hoe je de stemloze th-klank maakt en daarna gaan we oefenen met deze klank. Leg je telefoon of tablet alvast op je tafel.

De uitspraak van de stemloze "th", klinkt, als je alleen op de "th" klank let, als lucht die door een nauwe opening geperst wordt. Die nauwe opening wordt gevormd door het puntje van je tong tegen je boventanden te houden en dan de lucht naar buiten te persen door een nauwe ruimte tussen het puntje van je tong en je boventanden. Het geluid lijkt op het leeglopen van een fietsenband of een luchtbed. Kijk maar eens naar de volgende video:

*Video: stemloze th-klank*

#### Oefening 1

Probeer dit geluid eens te maken op de manier zoals dat in de video wordt voorgedaan. Plaats het puntje van de tong tegen je boventanden en pers de lucht naar buiten. Kijk of je buurman of -vrouw het op de zelfde manier doet.

Oefening 2

Als je denkt dat je nu goed weet waar je de klank maakt en hoe hij moet klinken, probeer je “ink” eraan te koppelen. Je begint dan met de stemloze th-klank, zoals je net geïoefend hebt, en dan zeg je, zonder pauze, meteen “ink” erachter. Doe dit eerst langzaam en daarna wat sneller, net zoals op de video te zien is.

Video: stemloze th-klank + ink

Opdracht 8

Probeer nu alle woorden in de onderstaande vier rijtjes hardop voor te lezen, met de juiste stemloze th-klank. In de video staan alle woorden voorgedaan. Soms staat de klank aan het begin van een woord, soms in het midden en soms aan het eind. Probeer op alle plekken steeds hetzelfde geluid te maken. Gebruik je telefoon en neem jezelf op als je de woorden voorleest. Zo kun je jouw uitspraak van de woorden vergelijken met de uitspraak in de video. Luister ook naar de opname van je buurman of –vrouw en bepaal samen of wat je hoort, ook klinkt zoals de woorden uitgesproken worden in de video.

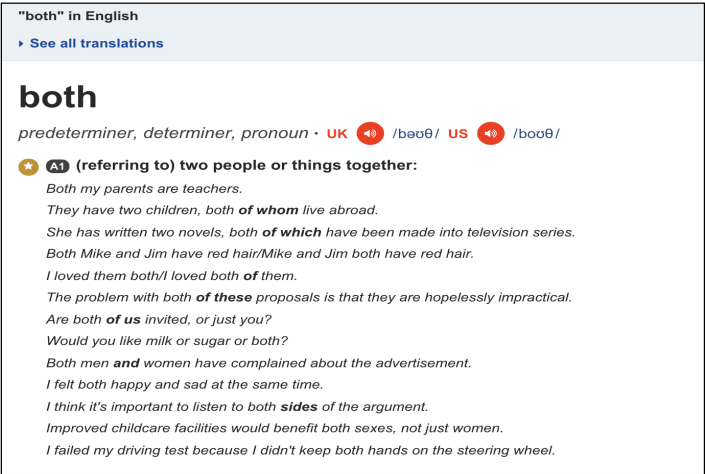
Think	throne
Author	bath
Thank	three
Arthur	month
Thunder	through
Birthday	path
Theme	thrive
Ether	Birth
Thorn	thrill
Pathetic	Eleventh

IPA-symbool voor de Engelse stemloze th-klank: θ

Als je op internet zoekt, vind je veel online woordenboeken. Open de onderstaande link maar eens en keer daarna weer terug naar deze pagina. Sluit daarbij niet de zojuist geopende link.

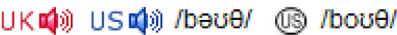
<http://dictionary.cambridge.org>

Type daar waar de cursor knippert maar eens het Engelse woord both. Je ziet dan de volgende informatie:



Figuur 1: Zoekresultaat voor ‘both’ in Cambridge Dictionaries

Als je op de rode luidspreker met de letters “UK” klikt, dan hoor je het woord op de juiste manier met een Brits accent uitgesproken. Druk je op het blauwe icoontje “US”, dan hoor je het woord met een Amerikaans accent uitgesproken. Wij kiezen voor het Brits accent. Door hierop te klikken en jezelf op te nemen, en dan jouw opname te vergelijken met de uitspraak van het woordenboek, kun je altijd controleren of je uitspraak correct is.



Figuur 2: Fonetisch schrift in IPA-symbolen voor ‘both’ in UK en US Engels

Ook zie je in figuur 2, achter het blauwe icoontje de tekens /bəʊθ/ staan. Deze tekens geven de uitspraak van het woord both weer in symbolen die we op internationaal niveau een vaste klank hebben gegeven voor het standaard Britse accent. We noemen dit het “fonetisch alfabet” of in het Engels “IPA: International Phonetic Alphabet”. Er zijn vele Engelse accenten die allemaal even waardevol zijn, maar wij kiezen hier één accent uit, omdat we niet alle accenten kunnen aanleren. Voor dit moment is het voldoende om te weten dat het teken θ staat voor de stemloze th-klank, die we net geïoefend hebben. Mocht je dus ooit twijfelen of een woord wel of niet uitgesproken wordt met een stemloze th-klank, dan kun je altijd dit woord intypen in een soortgelijk online woordenboek en kijken of het symbool θ erin voorkomt.



### 3.3 Stemloos en stemhebbend

Sommige klanken in het Engels zijn stemloos en anderen weer stemhebbend. Wat betekent dat eigenlijk? Het grote verschil tussen een stemhebbende en stemloze klank is natuurlijk het geluid dat je produceert. Je kunt “voelen” wanneer een klank stemhebbend of stemloos is. Probeer maar eens de volgende oefening.

#### Oefening 3

Stap 1: Bedek je oren met je handen. Druk maar stevig aan!

Stap 2: Maak dan het geluid van een s, alsof je het sissen van een slang nadoet : “sssssssss”

Stap 3: Ga zonder te stoppen van het geluid van een s over in het geluid van een z: “sssssszzzzz”



Wat voel je nu in je hoofd en aan je handen veranderen als je van een s naar een z gaat? Als het goed is, voel je trillingen in je hoofd en aan je handen. Deze trillingen noemen we vibratie. Deze vibratie is de “stem” die je aan een klank geeft. Als een klank gemaakt kan worden zonder deze vibratie, dan is de klank stemloos. Voel je deze vibratie wel, dan is de klank stemhebbend. De s is dus stemloos en de z is stemhebbend.

Maar waar wordt deze vibratie of “stem” nu gemaakt? Ergens in je hoofd misschien, omdat je het daar voelt? Nee, de “stem” wordt door het trillen van je stembanden toegevoegd aan de lucht die je uitademt, en zo maak je een klank stemhebbend. De stembanden zitten ergens in je keel (bij je adamsappel/strottenhoofd). Het zijn twee flapjes die heel snel tegen elkaar bewegen (net zoals een deksel op een pan met kokend water kan ratelen), waardoor geluid aan de lucht wordt toegevoegd. In de video zie je een opname van de stembanden gemaakt met een medische camera.

*Video: stembanden*

#### Oefening 4

Je kunt ook door je hand op je keel te leggen ( b.v. op de adamsappel) in plaats van met beide handen je oren te bedekken, en vervolgens van de s naar de z te gaan, de vibratie voelen. Probeer het maar eens.

Veel klanken hebben zowel een stemhebbende als een stemloze variant. Ze worden op de zelfde manier gemaakt maar het enige verschil is de stemloze of stemhebbende eigenschap van de klank. Kijk maar eens naar de bij elkaar horende koppels in het Nederland. Ook in het Engels bestaan die klanken.

Stemloos stemhebbend

P B

K G

T D

F V

S Z

### 3.4 De stemhebbende th-klank

We gaan nu verder met de uitleg over hoe je de stemhebbende th-klank maakt en daarna gaan we oefenen met deze klank. Ook nu is het weer handig als je je telefoon kunt gebruiken om opnames te maken.

De stemloze th-klank, maakte je door het puntje van je tong tegen je boventanden te houden en dan de lucht door een nauwe opening tussen het puntje van de tong en de boventanden te persen. Het geluid klinkt dan als een leeglopende fietsenband. Eigenlijk maak je de stemhebbende th-klank op de zelfde manier. We voegen alleen “stem” toe aan de lucht die we naar buiten persen. Je weet nu waar deze “stem” gemaakt wordt. Je moet bij het maken van de stemhebbende th-klank dus vibratie in je keel kunnen voelen als je daar je hand zou leggen. Het geluid dat je nu maakt, lijkt niet meer op een leeglopende fietsenband, maar meer op het geluid van een dikke bij of een hommel.

#### Oefening 5

Probeer het maar eens en luister naar het geluid op de video om te controleren of jij ook zo klinkt. Kijk en voel ook goed of je het puntje van je tong tegen de boventanden houdt en daar de lucht door een opening perst, terwijl je stembanden trillen (vibratie).

*Video: stemhebbende th-klank*

Als je denkt de juiste klank te kunnen maken, probeer je er de letterkombinatie “is”

achter te zeggen, zonder een pauze te maken tussen “th” en “is”. Probeer het eerst rustig en daarna snel, zoals op de video te zien en te horen is.

*Video: stemhebbende th-klank + is*

### Opdracht 9

Probeer nu alle woorden in de onderstaande drie rijtjes hardop voor te lezen, met de juiste stemhebbende th-klank. In de video staan alle woorden voorgedaan. Soms staat de klank aan het begin van een woord, soms in het midden en soms aan het eind. Probeer op alle plekken steeds hetzelfde geluid te maken. Gebruik je telefoon en neem jezelf dan op als je de woorden voorleest. Zo kun je jouw uitspraak van de woorden vergelijken met de uitspraak op de video. Luister ook naar de opname van je buurman of –vrouw en bepaal samen of wat je hoort, ook klinkt zoals de woorden uitgesproken worden in de video.

The	Other	Breathe	That
Father	with	Those	Either
Loathe	This	Feather	bathe
There	Rather	wreath	

## 3.5 IPA symbool voor de Engelse stemhebbende th-klank: ð

Open de onderstaande link en keer daarna weer terug naar deze pagina. Sluit daarbij niet de zojuist geopende link.

<http://dictionary.cambridge.org>

Type daar waar de cursor knippert maar eens het Engelse woord there. Je ziet dan de volgende informatie:

there English

**there**  
adverb • UK /ðeə/ US /ðer/

**there** adverb (PLACE)

**1** (to, at, or in) that place:  
Put the chair there.  
The museum is closed today. We'll go there tomorrow.  
There's that book you were looking for.  
I'll have to stop you there - we've run out of time.  
I left the boxes over/out/under there.

**> get there**

**2** to arrive somewhere:  
We'll never get there in time.

**3** INFORMAL to succeed:  
Try again - you'll get there in the end.

Als je op de rode luidspreker met de letters “UK” klikt, dan hoor je het woord op de

juiste manier in het Brits Engels uitgesproken. Door hierop te klikken en jezelf op te nemen, kun je altijd controleren of je uitspraak correct is.

Ook zie je in figuur 1, achter het blauwe icoontje de tekens /ðeə/ staan. Deze tekens geven de uitspraak van het woord there weer in IPA-symbolen. Voor nu is het voldoende om te weten dat het teken ð staat voor de stemhebbende th-klank die we net geïmagineerd hebben. Mocht je dus ooit twijfelen of een woord wel of niet uitgesproken wordt met een stemhebbende th-klank, dan kun je altijd dit woord intypen in een soortgelijk online woordenboek en kijken of het symbool ð op de plaats van de “th” staat.

## 3.6 De “th” die klinkt als een “t”

In enkele woorden wordt de “th” uitgesproken als een “t”. Voorbeelden hiervan zijn Esther, Thomas, en Thames. Je ziet dat dit vooral bij sommige namen het geval is en ook bij de naam van de beroemde rivier in London, The Thames. Dit zijn echter de uitzonderingen, want in de meeste gevallen zul je een stemloze of stemhebbende th-klank moeten uitspreken. Het kan echter geen kwaad om te onthouden dat zeker de veel voorkomende namen Esther en Thomas en de beroemde rivier in Londen, The Thames, met een t worden uitgesproken.

### Opdracht 10 (stemloze th-klank)

Lees het onderstaande verhaaltje “Theo and the thief” hardop voor en neem het op met je telefoon (spraakrecorder). Oefen eerst voordat je de opname maakt. Zoek eerste de woorden die een stemloze th-klank hebben en onderstreep die. Controleer dit met het woordenboek (online). Je kunt de tekst printen en dan de klanken onderstrepen. Je kunt ook het stukje tekst selecteren en dan vervolgens kopiëren naar een WORD-bestand. Dan kun je de onderstreepfunctie van WORD gebruiken. Als je klaar bent met de opname moet je de opname naar het emailadres van je docent sturen. Je docent zal naar je opname luisteren en beoordelen of je de woorden met een stemloze th-klank goed uitgesproken hebt.

Theo and the thief

Theo thought he heard a noise in his garage. When he looked through the window, he saw a thief running away through his back yard. Theo started running after the thief. The Thief ran through the busy streets and disappeared into thin air. Just as Theo thought he could not catch the thief anymore, he saw him again. The thief

put up his thumb with a smile and ran away again. Theo didn't feel threatened and followed the thief who took a dark path to escape. Right before the thief could really escape, Theo threw himself at him and they fell to the ground. When he looked into the thief's face he saw it was his friend, Arthur. Arthur smiled and shouted "Happy birthday to you, Theo". When Theo looked up he saw three of his other friends standing before him, smiling. Both Arthur and Theo started laughing. Theo's friends had organised a birthday party in a tent at the end of the path. "You thugs really fooled me!", he said. Theo was thrilled about the party and thanked his friends a thousand times.

### Opdracht 11 (stemhebbende th-klank)

Lees het onderstaande verhaaltje "The air that I breathe" hardop voor en neem het op. Oefen eerst voordat je de opname maakt. Zoek eerste de woorden die een stemhebbende th-klank hebben en onderstreep deze. Je kunt alles met een online woordenboek controleren. Kijk dan of je de juiste klank maakt door naar de IPA-symbolen te kijken. Als je klaar bent met de opname moet je de opname naar het emailadres van je docent sturen. Je docent zal naar je opname luisteren en beoordelen of je de woorden met een stemhebbende th-klank goed uitgesproken hebt.

The air that I breathe.

My mother and father really love each other. They have been married for 15 years and my father still calls my mother the love of his life. They cannot hide their love and sometimes they even kiss each other when some of my friends are around. That is rather embarrassing. Neither I nor my brother like them doing that. However, isn't it wonderful to have parents who love each other that much? I rather feel a bit embarrassed now and again then having to live with parents who argue all the time. Some friends laugh when they see my parents like that and others tell me that they are a bit jealous because their parents never show they love each other. Last week my father bought a leather coat as a present for my mother and it wasn't even her birthday. "Why did you buy me this coat?", my mother asked. "You know I don't need more than the air that I breathe and to love you?" I don't need those expensive gifts. Then they both kissed and started to sing "all I need is the air that I breathe and to love you", which is their favourite song by the Hollies. I can tell you that they are better lovers than singers, so I rather have them kiss than sing when my friends are around.

## 4 Bad klinkt als bed (æ en e)

### 4.1 Welk verschil kun je horen?

#### Oefening 1

Hoe spreek jij de volgende woorden uit? Maak een opname met je spraakrecorder:

1 bad – bed	6 pat - pet
2 sad – said	7 pan – pen
3 bat – bet	8 mat - met
4 shall – shell	9 band - bend
5 dad – dead	10 man -men

Luister goed naar je eigen opname. Als je let op de klinkers die je in de woordparen gebruikt, hoor je dan verschil tussen de klinker in het eerste en het tweede woord? Als je antwoordt met ja, probeer dan uit te leggen welk verschil je maakt. Schrijf dit op. Als je antwoordt met nee, denk dan eens na wat het verschil in uitspraak tussen de klinker in het eerste en het tweede woord zou kunnen zijn en maak opnieuw een opname. Dit betekent dus dat er een verschil moet zijn.

#### Oefening 2

Luister nu goed naar de woorden in de video. Wordt er inderdaad op de manier zoals jij dacht een verschil gemaakt? Welk verschil hoor je dus? Schrijf je antwoorden op.

*Video: æ en e*

Veel Nederlanders maken geen verschil tussen de uitspraak van de klinkers in bijvoorbeeld de Engelse woorden bad en bed en shall en shell en dat kan tot verwarring leiden. Omdat de meeste Nederlanders weten dat de Nederlandse korte klinker a, zoals in het Nederlandse woord bak, in het Engels niet voorkomt, maken ze een klank die lijkt op een Engelse of Nederlandse e, zoals in het Nederlandse woord bek. Zo klinkt het Engelse woord back vaak als het Nederlandse woord bek als het door Nederlanders wordt uitgesproken.

### Oefening 3

In de onderstaande video wordt het Engelse zinnetje *He came back* twee keer uitgesproken. Let vooral op het woordje *back*. De eerste keer wordt het fout uitgesproken, zoals veel Nederlanders die Engels spreken doen. De twee keer wordt het op de juiste Engelse manier uitgesproken. Kun jij omschrijven welk verschil je hoort? Schrijf dit op.

*Video: Nederlandse en Engelse uitspraak*

### Oefening 4

In de volgende video zie je alleen het verschil in beweging van de mond. Je hoort geen geluid. De eerste keer wordt vertraagd aangegeven hoe je *back* met een Nederlands accent (dus fout) uitspreekt, en de tweede keer op de juiste Engelse manier. Let goed op de beweging van de kaak. Welk verschil in beweging van de kaak zie je? Schrijf dat op.

*Video: kaakbeweging*

### Opdracht 12

Spreek nu de volgende woorden nogmaals uit en maak daarvan weer een opname. Let daarbij op het verschil tussen de klinker in het eerste woord en het tweede. De onderkaak zakt bij de klinker in het tweede woord altijd een beetje naar beneden in vergelijking met de klinker in het eerste woord. Controleer of je uitspraak goed is door nogmaals naar de volgende video te kijken en te luisteren.

- |                 |               |
|-----------------|---------------|
| 1 bed – bad     | 6 pet – pat   |
| 2 said – sad    | 7 pen – pan   |
| 3 bet – bat     | 8 met – mat   |
| 4 shell – shall | 9 bend – band |
| 5 dead – dad    | 10 men – man  |

*Video: kaakbeweging in woorden*

## 4.2 De Nederlandse -e- en de Engelse -e-

Wat veel Nederlanders die Engels spreken niet weten, is dat de Nederlandse *e* (in het Algemeen Nederlandse accent) in bijvoorbeeld het woord *pet* niet de zelfde klank heeft als de Engelse *e* in bijvoorbeeld het Engelse woord *pet* (= huisdier). Het verschil is zo klein, dat het niet vlug tot problemen zal leiden, maar wil je toch nog “Engelser” klinken, dan moet je hier toch op letten.

### Oefening 1

Welk verschil hoor je als je luistert naar de woorden in de volgende video? Eerst wordt het Nederlandse woord *pet* uitgesproken en daarna de klinker nog eens herhaald. Vervolgens wordt het Engelse woord *pet* uitgesproken en de klinker herhaald. Schrijf op welk verschil jij hoort

*Video: Nederlandse en Engelse e*

### Oefening 2

Je kunt het verschil ook zien. Kijk goed naar de volgende video. Er worden drie woorden uitgesproken waarna de drie klinkers nog eens apart herhaald worden. Het eerste woord is het Nederlandse woord *pet*, het tweede woord is het Engelse woord *pet* en het derde woord is het Engelse woord *pat*. Dit woord heeft de klank *æ*. Speel de video eerst af zonder geluid en kijk dan alleen naar de beweging van de onderkaak. Wat zie je? Speel de video vervolgens af met geluid en beschrijf het verschil tussen de drie klinkers die je hoort.

*Video: Nederlandse e, Engelse e en Engelse æ*

Als je goed gekeken en geluisterd hebt, dan zie je dat de onderkaak telkens een klein stukje zakt als je van de Nederlandse *e* naar de Engelse *e* en vervolgens naar de Engelse *æ*-klank gaat. De Nederlandse *e* klinkt wat “hoger” dan de Engelse *e* en deze klinkt weer wat “hoger” dan de Engelse *æ*-klank. Veel Nederlanders gebruiken dus de “hoge” Nederlandse *e* voor zowel de Engelse *e* als de Engelse *æ*.

### Opdracht 13

Je krijgt telkens drie woorden te lezen. Het eerste woord is altijd een Nederlands woord

met de korte klinker e, het tweede woord is altijd een Engels woord met de korte Engelse klinker e en het derde woord is altijd een Engels woord met de klinker die klinkt als æ. spreek de woorden uit en probeer telkens het verschil te laten horen tussen de drie klanken. Maak een opname terwijl jij de woorden voorleest. Zodra je tevreden bent met de opnamen, stuur je deze door aan je docent. Deze bepaalt of je uitspraak voldoende is.

Nederlandse e	Engelse e	Engelse æ
1 bed	bed	bad
2 zet	said	sad
3 red	red	rat
4 pen	pen	pan
5 letter	letter	ladder
6 Ben	Ben	ban
7 kent	Kent (plaatsnaam)	can
8 rockband	bent	Rock band
9 zend	send	sand

### 4.3 oak klinkt als ook (əʊ = OO)

De letter o

We hebben het al in de inleiding gehad over het Internationale Fonetisch Alfabet (International Phonetic Alphabet, of IPA), waarin iedere klank die je in het standaard Engelse accent (RP) kunt maken, een eigen symbool heeft. Waarom is dit nu zo belangrijk? Kijk eens naar de volgende woorden. Weet jij hoe ze uitgesproken worden? Let daarbij vooral op de onderstreepte klinker die weergegeven wordt met de letter o.

1. Bone
2. Done
3. Cord
4. Word
5. Womb
6. Woman
7. Women

Luister en kijk naar de video om te kijken of jij de woorden op de zelfde manier uitspreekt.

*Video: de letter o*

Als je weet hoe deze woorden uitgesproken worden, dan merk je dat de o die je in het woord onderstreept ziet, in alle woorden anders wordt uitgesproken. Iemand die niet de uitspraak van alle woorden kent, maar misschien alleen de uitspraak van het eerste woord, denkt misschien dat telkens als je een o geschreven ziet in een woord, je de o zo uitspreekt als in het eerste woord. Als dit het geval zou zijn, zou hij alle andere woorden verkeerd uitspreken omdat de o in elk woord weer anders klinkt. Kijk maar eens naar de IPA-symbolen die gebruikt worden om de juiste klank van de klinker o in deze woorden aan te geven.

1. Bone b əʊ n/
2. Done d ʌ n
3. Cord k ɔ: d
4. Word w ɜ: d
5. Womb w u: m
6. Woman 'w ʊ m .ə n
7. Women 'w ɪ m ɪ n

Je ziet dus dat de zelfde o in de spelling van deze 7 woorden, zeven verschillende IPA-symbolen heeft en dat betekent dus dat de o op zeven verschillende manieren wordt uitgesproken. Je kunt de spelling dus echt niet vertrouwen. Ook al weet je hoe de o in bone klinkt, dan weet je nog niet automatisch hoe de o in word klinkt. Omdat het onmogelijk is om de uitspraak van alle woorden in het Engels uit je hoofd te leren, heeft men de IPA-symbolen bedacht. Of nu iemand in China, Rusland of Nederland wilt weten hoe je een bepaald woord uitspreekt; het IPA-systeem zorgt ervoor dat iedereen die de klanken van het IPA geleerd heeft, en dus weet welk symbool bij welke klank hoort, een woord kan opzoeken en aan de hand van de IPA symbolen ook kan uitspreken.

### 4.4 Nederlandse klanken in het Engels gebruikt

Hoe komt het nu dat je vaak aan het accent van iemand die Engels spreekt, maar wiens

moedertaal een andere taal is, kunt horen uit welk land de spreker komt. De meeste Fransen spreken natuurlijk Engels met een Frans accent, de Duitsers met een Duits en de Nederlanders met een Nederlands accent. Wat gebeurt er dan eigenlijk waardoor het Engels bijvoorbeeld meteen Nederlands klinkt?

Omdat veel talen gebruik maken van klanken die veel lijken op klanken uit een andere taal, gebruikt men, indien men bijvoorbeeld Engels spreekt, vaak de klanken uit de eigen taal, omdat men het verschil niet hoort of denkt dat het niet uitmaakt. Denk maar eens aan de verschillen tussen de Nederlandse e en de Engelse e.

Vaak gebruiken mensen ook de klank die ze kennen van de spelling in de eigentaal, zonder rekening te houden met het feit dat de spelling van die letter wel eens een andere klank zou kunnen hebben in een andere taal. Veel Nederlanders gebruiken daarom vaak Nederlandse klanken die ze van de spelling en uitspraak in het Nederlands kennen, en kopiëren die klanken naar het Engels. Soms levert dat geen problemen op, omdat de klanken dicht genoeg bij elkaar liggen, zodat de native speaker (is iemand die Engels als moedertaal heeft) wel iets vreemds hoort, maar je toch begrijpt. Soms leidt het wel tot problemen en begrijpt de native speaker je verkeerd. Bekijk het volgende voorbeeld maar eens.

Een Nederlander wil in het Engels zeggen:

Engelse zin: *People are losing faith in politics.*

Nederlandse vertaling: *Mensen verliezen vertrouwen in de politiek.*

De Nederlandse spreker kan echter de th-klank in faith niet goed uitspreken en vervangt deze klank door de Nederlandse s-klank, die ook weer in het Engels voorkomt. De zin van de Nederlander klinkt dus als volgt:

Engelse zin uitgesproken: *People are losing face in politics.*

Nederlandse vertaling: *Mensen leiden gezichtsverlies in de Nederlandse politiek.*

Je ziet dus dat de uitgesproken zin van de Nederlander iets heel anders betekent dan wat hij eigenlijk wilt zeggen. De native speaker zal hem dus verkeerd begrijpen. Je moet dus altijd proberen om zo dicht mogelijk bij de standaard klank in de buurt te komen als je Engels spreekt.

## 4.5 De letter o

Veel Nederlanders gebruiken de klank van de klinker o in Nederlandse woorden als zo, doos, bodem en nodig ook in de eenvoudige Engelse woorden als so, go, no, those, know, below soul en oak. Er is echter een groot verschil tussen de klanken van de Nederlandse o in zo en de Engelse o in so. Luister en kijk maar een naar de volgende video waarin de onderstaande woorden worden uitgesproken. De eerste keer wordt het woord uitgesproken zoals veel Nederlanders dat (fout) doen. De tweede keer wordt het woord op de RP manier uitgesproken. Hoor jij verschil? Probeer op te schrijven wat je hoort.

1 so	6 although
2 no	7 soul
3 go	8 role
4 those	9 know
5 below	10 stone

Kijk nu nog eens naar de video en zet het geluid uit. Kun je ook aan de beweging van de kaak en de lippen zien dat er verschil is tussen de eerste uitspraak en de tweede? Schrijf het verschil dat je kunt zien op.

Als je goed gekeken en geluisterd hebt, dan hoor en zie je verschil. Je hoort dat de klinker in het eerste woord maar 1 klank bevat en dat bij de tweede uitspraak er een “beweging” in de klank zit. Je begint ergens anders dan waar je eindigt. Dat het je in het Nederlands ook. De au in het Nederlandse woord flauw begint anders dan dat het eindigt. Je hebt eigenlijk twee klanken in één. Dit is in het Nederlands makkelijk te zien omdat de klank ook bestaat uit twee letters.

De o in het Engelse woord so, laat echter maar één letter in de spelling zien, maar toch spreek je er twee uit. Als je het IPA-symbool voor deze klank ziet, wordt het weer wat makkelijker omdat je nu ook twee symbolen ziet die de klank weergeven.

Woord woord met IPA-symbolen

so /səʊ/

Het symbool əʊ staat dus voor de klank die gemaakt wordt in tweede uitspraak van elk



woord in de video. Als je goed kijkt, zie je ook dat de onderkaak zich naar de bovenkaak beweegt terwijl deze klank gemaakt wordt. Ook worden de lippen meer gerond aan het einde van de klank. Houd maar eens je onderkin vast en dan spreek je de woorden uit de video nog eens uit zoals het wordt voorgedaan. Als je het goed doet, dan voel je bij de eerste uitspraak van het woord je kin niet bewegen tijdens de klank van de onderstreepte klinker. Bij de tweede uitspraak voel je de kin wel bewegen.

#### Opdracht 14

Spreek nu zelf onderstaande woorden in één keer goed uit. Zeg ze drie keer achter elkaar. Misschien helpt het als je in de spiegel kijkt of je kin vasthoudt. Je kaak moet bewegen bij de juiste uitspraak van deze woorden.

1 so	6 although
2 no	7 soul
3 go	8 role
4 those	9 know
5 below	10 stone

Kijk en luister weer naar onderstaande video om te zien en te horen of je de woorden op de juiste manier uitspreekt.

*Video: /əʊ/ in woorden*

#### Opdracht 15

Lees het onderstaande verhaaltje met de titel The little man door en onderstreep de klinkers die volgens jou als æ (zoals in het Engelse woord “bad”) worden uitgesproken. Gebruik een woordenboek om dit te controleren. Print of kopieer de tekst (naar een WORD-bestand) om te kunnen onderstrepen. Maak daarna een opname met je spraakrecorder terwijl je het verhaaltje voorleest. Let daarbij op de juiste uitspraak van de woorden met de æ -klank. Zodra je tevreden bent over je eigen uitspraak moet je de opname aan je docent sturen. Je docent beoordeelt of je uitspraak voldoende is.

The little man.

There once was a little man who had a really bad temper. He hated taller people and

always felt really angry when someone said something about his height. He could not accept the fact that he was smaller than the average man so he went to see the doctor to ask for help. The doctor told him about a surgeon who could add bone to the legs to make him taller. The little man was very pleased to hear this and after meeting the surgeon he decided to have the operation. After six painful months the once little man was able to walk again. He did not feel little anymore and he walked around town with a smile on his face, when he saw the most beautiful little woman he had ever seen before in his life, working in a little flower shop. For days he came to the same place to see the little woman. Finally he found the courage to enter the flower shop. He bought 10 (ten) red roses and added a card saying “I’m madly in love with you”. He paid at the cash desk but when the little woman handed him the flowers, he refused to take them and said “They are for you! Would you like to have dinner with me tonight?” The little woman smiled and said “Thank you, but you are too tall for me and I would feel uncomfortable walking next to you.” The once little man felt very sad and left the flower shop. He could not believe that he was too tall for the woman of his dreams.

#### Opdracht 16 /əʊ/ -klank (no)

Lees het onderstaande verhaaltje met de titel King Alfred’s bones en onderstreep de klinkers die volgens jou als /əʊ/ (zoals in de Engelse woorden “no” en “oak”) worden uitgesproken. Gebruik een woordenboek om dit te controleren. Print of kopieer de tekst (naar een WORD-bestand) om te kunnen onderstrepen. Maak daarna een opname met je spraakrecorder terwijl je het verhaaltje King Alfred’s bones voorleest. Zorg dat je de /əʊ/ op de juiste manier uitspreekt. Zodra je tevreden bent over je eigen uitspraak moet je de opname aan je docent sturen. Je docent beoordeelt of je uitspraak voldoende is.

King Alfred’s bones.

Underneath a black stone Peter found a pile of bones. He thought the bones to be of a human being. Peter collected the bones. He put them in a plastic bag and took them home. He remembered talking about the history of his little town in school. The teacher had told a story about an old church in the middle of their town where the bones of a famous king named Alfred had been buried about 1200 years ago. The church was long gone but the people of his town still believed that King Alfred’s bones were still buried somewhere near where the church had been, hundreds of years ago. Could he be the proud owner of King Alfred’s bones? The next day he took the

bones with him to school and showed them to his biology teacher. Peter explained where he had found the bones and asked if these could have belonged to King Alfred. His teacher smiled and said; “Well, if King Alfred only had had two toes and a tiny little tail, these bones could have belonged to him.” Peter immediately understood the mistake he had made and felt ashamed. He had found the bones of a pig buried in a farmer’s field.

Appendix F:  
Perceived Teacher’s Effort for  
Teaching English Pronunciation  
(questions students) and Teacher’s  
Effort for Teaching English  
Pronunciation (questions teachers)

	Please, read the question and write a X for the best suitable answer regarding your situation in class: (1 = never 2 = sometimes 3= regularly 4= often)	Please, read the question and write a X for the best suitable answer regarding your teaching practice: (1 = never 2 = sometimes 3= regularly 4= often)	1 = never 2 = sometimes 3 = regularly 4 = often
question nr:	questions: students	questions: teachers	Choose 1,2,3 or 4
Q 1	Do you practise English pronunciation in class?	Does pronunciation teaching occur in your English lessons?	
Q 2	Do you receive IT tools from your teacher to practise pronunciation?	Do you provide your pupils with IT tools to practise pronunciation?	
Q 3	Does your teacher interrupt you while you are speaking English to correct your pronunciation?	Do you interrupt your students while they are speaking English to correct their pronunciation?	
Q 4	Do you practise certain pronunciation aspects of English in class?	Do you teach certain pronunciation aspects of English in class?	
Q 5	Do you watch videos or films with the focus on English pronunciation in class?	Do you present videos or films with the focus on English pronunciation in class?	
Q 6	Has you teacher pointed out where or how you can find audio-visual materials to practise English pronunciation?	Do you point out to your students where or how they can find audio-visual materials to practise English pronunciation?	
Q 7	Do you receive tasks dealing with English pronunciation practice?	Do you provide your students with tasks on English pronunciation practice?	

Q 8	Do you practise English pronunciation in class (this does not mean doing communicative speaking exercises)?	Do you teach English pronunciation (this does not mean offering communicative speaking exercises)?	
Q 9	Does your teacher, spontaneously, focus on a students' pronunciation mistake when teaching other skills than pronunciation (e.g. reading or grammar)?	Do you, spontaneously, focus on a students' pronunciation mistake when teaching other skills than pronunciation (e.g. reading or grammar)?	
Q 10	Do you get a mark for your pronunciation skills?	Do you evaluate (grade) your students' pronunciation skills?	
Q 11	Do you receive drill-exercises (you repeat what teacher or native speaker on a recording says ) to practise English pronunciation?	Do you use drill-exercises (students repeat what teacher or native speaker on a recording says ) to teach English pronunciation?	
Q 12	Do you record yourself while speaking English?	Do you record your students while they are speaking English?	
Q 13	Do you record yourself while speaking English and receive feedback on the recorded performance?	Do you record your students while speaking English and give feedback on the recorded performance?	
Q 14	Does your teacher provide you with IT-tools to practise pronunciation outside of the classroom?	Do you provide your students with IT-tools to practise pronunciation outside of the classroom?	
Q 15	Do you practise how to articulate various phonemes in English (e.g. teacher points out the position of tongue or lips)?	Do you teach how to articulate various phonemes in English (e.g. point out the position of tongue or lips)?	
Q 16	Do you use IT tools to practise pronunciation in class?	Do you use IT tools to practise pronunciation in class?	
Q 17	Is there any time reserved especially for practising pronunciation (e.g. once a week, 5 minutes each lesson)?	Do you reserve specific teaching time to teach pronunciation?	
Q 18	Have you practised English pronunciation by using materials made by your teacher?	Do you make your own teaching materials to teach English pronunciation?	
Q 19	Have you discussed the most common pronunciation mistakes Dutch speakers of English make?	Do you mention and teach the most common pronunciation mistakes Dutch speakers of English make?	
Q 20	Does your teacher interrupt you when you are speaking English, in order to correct the pronunciation of a certain sound or word?	Do you isolate students' pronunciation mistakes and correct them?	
Q 21	Have you practised the difference between voiced and voiceless phonemes in the English language?	Do you teach the difference between voiced and voiceless phonemes in the English language?	
Q 22	Have you practised the articulation of the voiced th in words like <i>these</i> or <i>other</i> ?	Do you teach the articulation of the voiced th in words like <i>these</i> or <i>other</i> ?	

Q 23	Have you practised the articulation of the voiceless th in words like <i>think</i> or <i>author</i> ?	Do you teach the articulation of the voiceless th in words like <i>think</i> or <i>author</i> ?	
Q 24	Have you discussed the difference between rhotic r in General American and the absence of rhotic r in Received Pronunciation?	Do you teach the difference between rhotic r in General American and the absence of rhotic r in Received Pronunciation?	
Q 25	Have you practised the difference between the sound of the vowel a in <i>bad</i> en e in <i>bed</i> ?	Do you teach the difference between the sound of the vowel a in <i>bad</i> en e in <i>bed</i> ?	
Q 26	Have you practiced "aspiration" ( "puff of air" following initial p, t, or k)?	Do you teach aspiration ( "puff of air" following initial p, t, or k)?	
Q 27	Have you practised the difference in pronunciation of e.g. the <i>oo</i> in the Dutch word <i>oak</i> or <i>o</i> in <i>zo</i> and the <i>oa</i> in the English word <i>oak</i> or <i>o</i> in <i>so</i> ?	Do you teach the pronunciation of the o in English words like <i>oak</i> , and <i>so</i> , compared to the o in Dutch words like <i>oak</i> and <i>zo</i> ? (RP diphthong versus Dutch monophthong)	
Q 28	Have you discussed what a "linking r" is?	Do you teach "Linking-r" in your lessons?	
Q 29	Do you practise pronunciation while listening to a recording or watch a video in class?	Do you link pronunciation teaching and teaching listening skills?	
Q 30	Have you seen one or more of these symbols in class: $\delta$ , $\text{æ}$ , $\text{əʊ}$ , $\text{f}$ , $\text{ʒ}$ , $\text{ɹ}$ , $\text{ə}$ ?	Do you use the symbols of the International Phonetic Alphabet to explain the pronunciation of English phonemes?	

